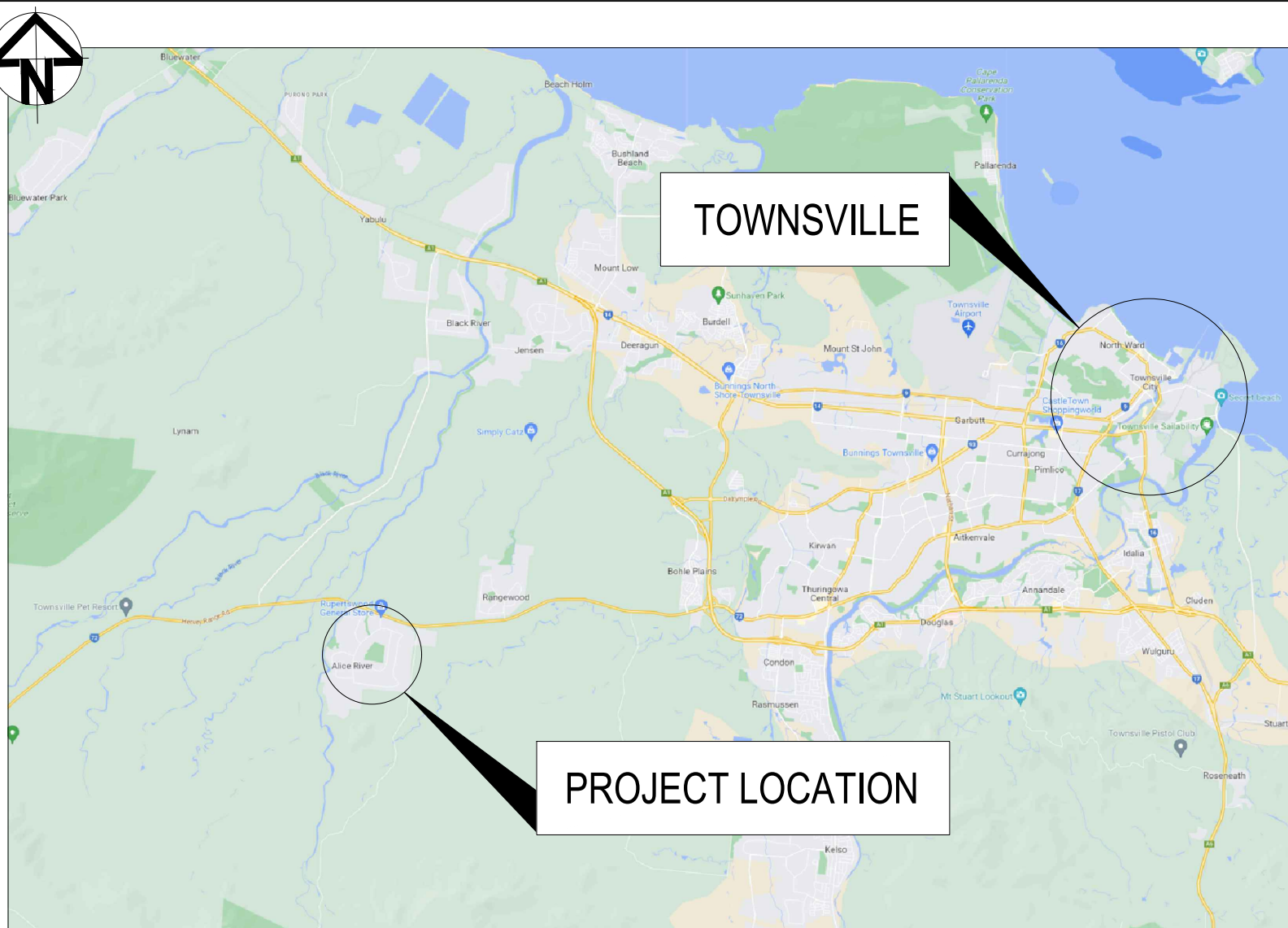


MT MARGARET ESTATE STAGE 12

OPERATIONAL WORKS

ALICE RIVER, QLD 4817



LOCALITY PLAN KEY
NTS

EXISTING		PROPOSED	
	KERB ONLY		KERB ONLY
	KERB AND CHANNEL		KERB AND CHANNEL
	ROAD SHOULDER		ROAD SHOULDER
	CONTOUR (0.250m)		MINOR CONTOUR (0.250m)
	CONTOUR (1.00m)		MAJOR CONTOUR (1.00m)
	ROAD EDGE UNSEALED		ROAD EDGE UNSEALED
	TOP OF BATTER		TOP OF BATTER
	BOTTOM OF BATTER		BOTTOM OF BATTER
			ROAD EDGE GUIDE POST

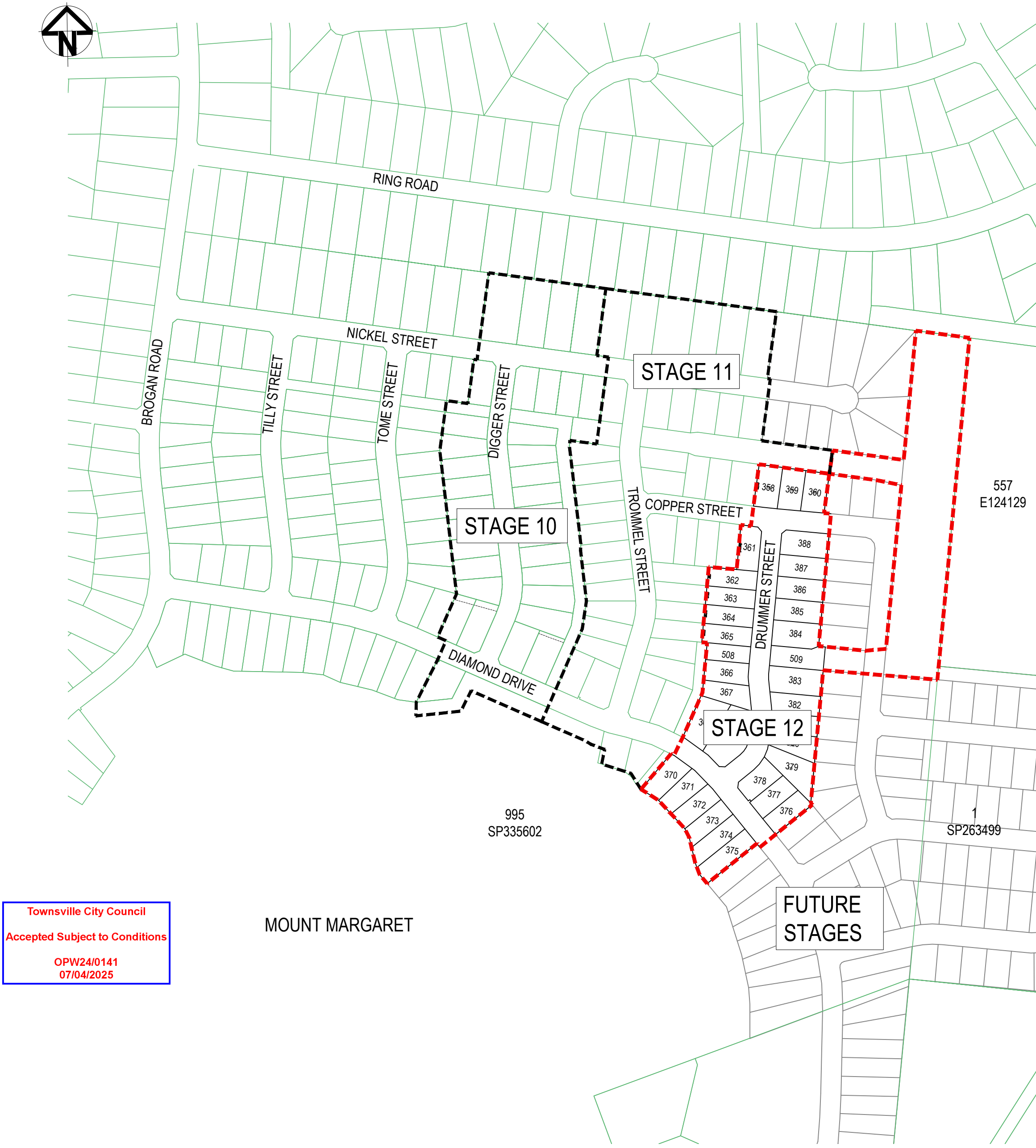
SERVICES (PUP) LEGEND		
	EXISTING	PROPOSED
DRAINAGE (unknown dia.)		
DRAINAGE (known dia.)		
WATER MAIN		

(*) - DENOTES QUALITY LEVEL AS PER A.S. 5488-2013.

- NOTES:
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS.
 - BEFORE PROCEEDING WITH THE WORK ANY DISCREPANCIES IN THE CONTRACT DOCUMENTS SHALL BE REFERRED FOR DECISION TO THE SUPERINTENDENT.
 - DO NOT SCALE FROM DRAWINGS. IF IN DOUBT, ASK!
 - CONTRACTOR SHALL VERIFY ALL LOCATIONS OF SERVICES, ALL DIMENSIONS AND LEVELS PRIOR TO CONSTRUCTION.
 - ALL MATERIALS & WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE LOCAL AUTHORITY'S BY-LAWS.
 - THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL RELEVANT APPROVALS PRIOR TO COMMENCEMENT OF WORKS.

SURVEY NOTES:

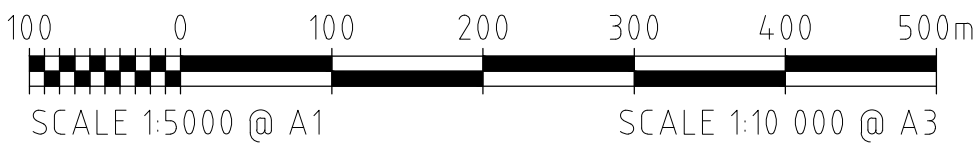
- SERVICES SHOWN HAVE BEEN LOCATED BY FIELD SURVEY MEASUREMENT FOR SURFACE INFORMATION AND INVERT LEVEL INFORMATION AS SHOWN, WHERE POSSIBLE. SERVICE PROVIDER RECORDS HAVE BEEN USED TO INDICATE UNDERGROUND SERVICE LOCATIONS SHOWN THROUGHOUT THE CONTOUR AND DETAIL SURVEY. PRIOR TO ANY DEMOLITION CONSTRUCTION OR EXCAVATION, THE RELEVANT AUTHORITIES SHOULD BE CONTACTED FOR LOCATION OF SERVICES.
- DUE TO THE ACCURACY OF SURVEY PROVIDED ALL SETOUT AND LEVELS MUST BE CONFIRMED ON SITE PRIOR TO COMMENCING ANY WORKS.
- EXISTING GROUND LEVELS HAVE BEEN DERIVED FROM DETAIL SURVEY COMPLETED BY ROWLANDS SURVEYS ON THE 24TH OF JULY 2024 USING THE FOLLOWING SPATIAL PARAMETERS:
LEVEL DATUM: AHD
REF BM No: PM 193516
REDUCED LEVEL: 54.562
LOCATION: DIAMOND DRIVE



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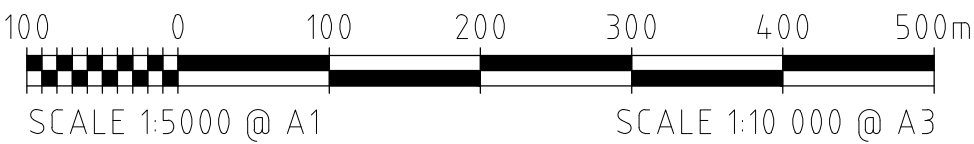
MOUNT MARGARET

LOCALITY PLAN
1:5000



CIVIL ENGINEERING DRAWINGS		
Sheet Number	Sheet Title	Rev
C001	LOCALITY PLAN AND DRAWING INDEX	D
C002	ROADS CONTROL LINE SETOUT	C
C003	DRAINAGE CONTROL LINE SETOUT	D
C051	EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 1	C
C052	EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 2	D
C053	EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 3	B
C061	ROADS LONGITUDINAL SECTIONS SHEET 1	D
C062	ROADS LONGITUDINAL SECTIONS SHEET 2	C
C063	DRAINAGE CHANNEL LONGITUDINAL SECTION	C
C071	INTERSECTION SETOUT DETAILS SHEET 1	D
C072	INTERSECTION SETOUT DETAILS SHEET 2	E
C081	ROADS CROSS SECTIONS SHEET 1	B
C082	ROADS CROSS SECTIONS SHEET 2	B
C083	ROADS CROSS SECTIONS SHEET 3	B
C084	ROADS CROSS SECTIONS SHEET 4	B
C085	OPEN CHANNEL SECTIONS SHEET 1	A
C086	OPEN CHANNEL SECTIONS SHEET 2	A
C087	OPEN CHANNEL SECTIONS SHEET 3	A
C101	EROSION AND SEDIMENT CONTROL LAYOUT PLAN	B
C102	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS SHEET 1	C
C103	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS SHEET 2	C
C201	BULK EARTHWORKS NOTES, DETAIL AND LEGEND	B
C202	BULK EARTHWORKS LAYOUT PLAN	B
C301	SURFACE TREATMENT LAYOUT PLAN	B
C401	CULVERT LAYOUT AND LONGITUDINAL SECTIONS	C
C402	DRAINAGE DETAILS	B
C601	WATER RETICULATION LAYOUT PLAN	B
C602	WATER RETICULATION NOTES AND DETAILS	B

REFERENCED STANDARD DRAWINGS	
DRAWING No.	DRAWING TITLE
SD-020D	TCC - CONCRETE KERBING
SD-060A	TCC - TRAFFIC SIGN INSTALLATION
SD-065A	TCC - STREET NAME SIGN AND INSTALLATION DETAILS
SD1260	TMR - R C BOX CULVERTS AND SLAB LINK BOX CULVERTS - CULVERTS HEIGHT = 375 TO 600
SD1359	CULVERTS - INSTALLATION, BEDDING AND FILLING/BACKFILLING AGAINST/OVER CULVERTS



APPROVAL ISSUE
6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION		 m e 0400 699 979 brett@langtreeconsulting.com.au	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS					SCALE		AS SHOWN				
	D	B.L.	10.03.25	APPROVAL ISSUE - SURVEY DATUM	VERT. DATUM		AHD		 BRETT LANGTREE RPEQ NO. 11932			NICKEL STREET ALICE RIVER, QLD, 4817					SHEET		1 OF 28				
	C	B.L.	13.12.24	APPROVAL ISSUE - SHEET LIST UPDATED	DRG. FILE		0944		DATE								REVISION		A B C D				
	B	B.L.	06.12.24	APPROVAL ISSUE	DESIGN		B.L.		NOV '24			LOCALITY PLAN AND DRAWING INDEX					DRG No.		0944 - C001				
	A	B.L.	18.11.24	PRELIMINARY ISSUE	DRAWN		C.B.P.		NOV '24														
	No.	BY	DATE	DESCRIPTION																			

CONTROL LINE 'A' SETOUT TABLE - DIAMOND DRIVE								
POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
TC	129.292	58420.475	861012.750	104d09'46"				
IP3	209.683	58501.226	860992.372		250	52.176	36d50'56"	104.352
START	219.017	58501.720	860975.819	124d43'34"				
CT	290.075	58553.624	860927.640	141d00'41"				
IP4	408.546	58628.161	860835.556	141d00'41"				

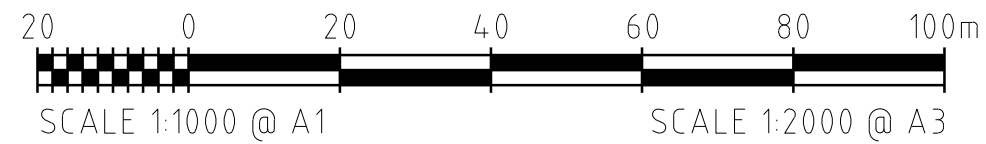
CONTROL LINE 'D' SETOUT TABLE - COPPER STREET									
POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH	
IP1	160.097	58581.784	861329.425	97d41'10"					
TC	179.669	58601.180	861326.807	97d41'10"					
IP2	189.961	58611.382	861325.430		500.000	10.294	2d21'32"	20.586	
CT	200.254	58621.631	861324.475	95d19'38"					
IP3	304.813	58725.738	861314.767	95d19'38"					

CONTROL LINE 'E' SETOUT TABLE - NEW ROAD									
POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH	
IP1	0.000	58550.136	860931.853	51d00'41"					
TC	49.146	58588.336	860962.775	51d00'41"					
IP2	69.198	58604.814	860976.113		50.000	21.201	45d57'19"	40.103	
CT	89.250	58606.683	860997.232	5d03'23"					
TC	122.473	58609.611	861030.326	5d03'23"					
IP3	132.107	58610.463	861039.951		100.000	9.663	11d02'20"	19.267	
CT	141.740	58609.456	861049.562	354d01'02"					
TC	172.144	58606.287	861079.800	354d01'02"					
IP4	182.014	58605.255	861089.649		100.000	9.902	11d18'36"	19.740	
CT	191.884	58606.174	861099.508	5d19'38"					
IP5	417.314	58627.103	861323.964	5d19'38"					

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07/04/2025

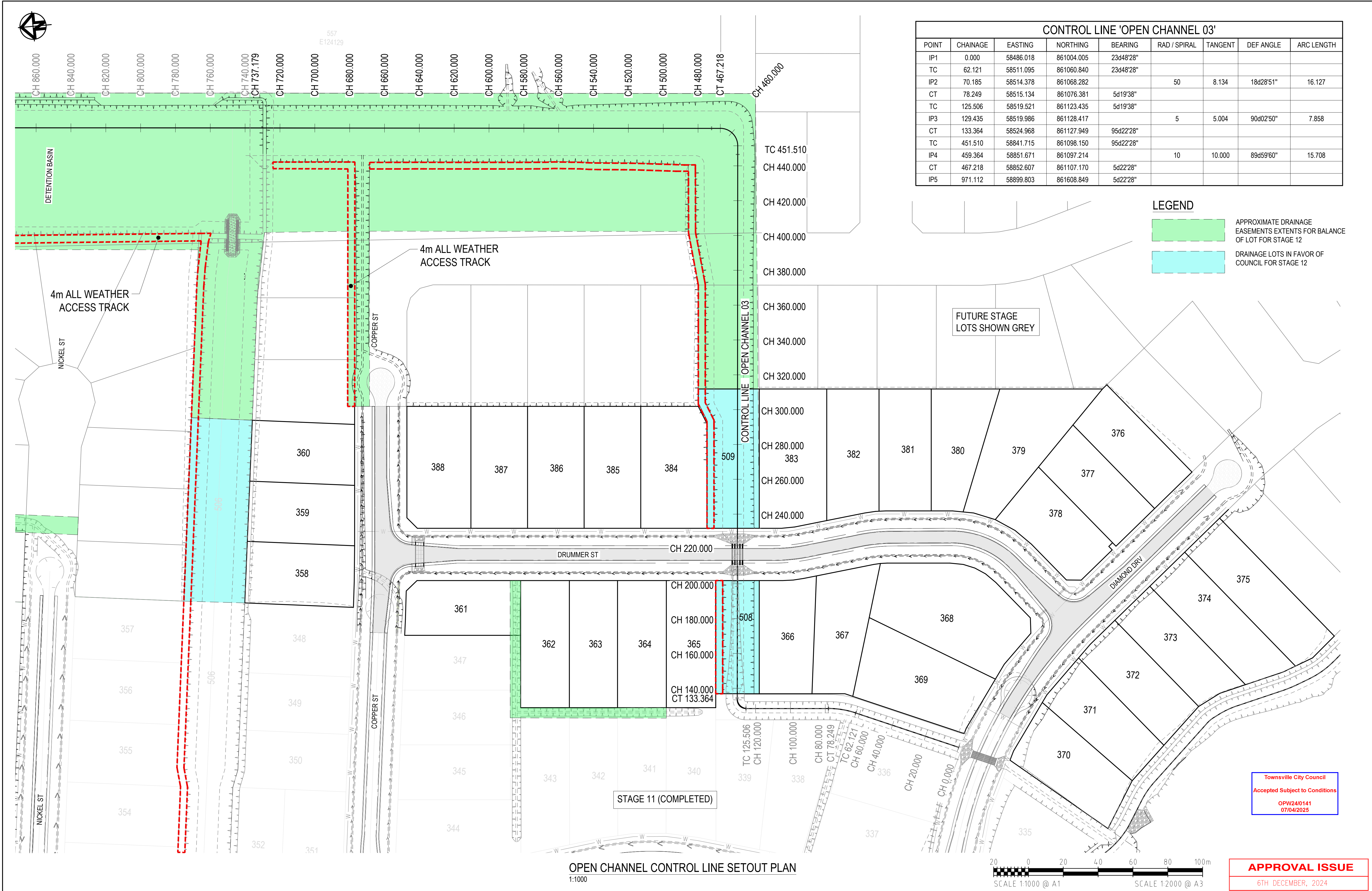


ROADS CONTROL LINE SETOUT PLAN
1:1000



APPROVAL ISSUE
6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION		 Langtree Consulting m 0400 699 979 e brett@langtreeconsulting.com.au	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS						SCALE	1:1000			
	C	B.L.	13.12.24		APPROVAL ISSUE - TABLE LABEL UPDATED		VERT. DATUM		AHD									 BRETT LANGTREE RPEQ NO. 11932		SHEET	2 OF 28	
	B	B.L.	06.12.24		APPROVAL ISSUE		DRG. FILE		0944	DATE		COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 368 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figure dimensions take precedence over scale. Do not scale from this drawing.</small>		REVISION	A	B	C					
	A	B.L.	18.11.24		PRELIMINARY ISSUE		DESIGN		B.L.	NOV '24				DRG No.	0944 - C002							
	No.	BY	DATE		DESCRIPTION		DRAWN		C.B.P.	NOV '24												



CONTROL LINE 'OPEN CHANNEL 03'								
POINT	CHAINAGE	EASTING	NORTHING	BEARING	RAD / SPIRAL	TANGENT	DEF ANGLE	ARC LENGTH
IP1	0.000	58486.018	861004.005	23d48'28"				
TC	62.121	58511.095	861060.840	23d48'28"				
IP2	70.185	58514.378	861068.282		50	8.134	18d28'51"	16.127
CT	78.249	58515.134	861076.381	5d19'38"				
TC	125.506	58519.521	861123.435	5d19'38"				
IP3	129.435	58519.986	861128.417		5	5.004	90d02'50"	7.858
CT	133.364	58524.968	861127.949	95d22'28"				
TC	451.510	58841.715	861098.150	95d22'28"				
IP4	459.364	58851.671	861097.214		10	10.000	89d59'60"	15.708
CT	467.218	58852.607	861107.170	5d22'28"				
IP5	971.112	58899.803	861608.849	5d22'28"				

LEGEND

APPROXIMATE DRAINAGE EASEMENTS EXTENTS FOR BALANCE OF LOT FOR STAGE 12

DRAINAGE LOTS IN FAVOR OF COUNCIL FOR STAGE 12

REVISIONS

D	B.L.	12.03.25	APPROVAL ISSUE - EASEMENTS UPDATE
C	B.L.	06.12.24	APPROVAL ISSUE - CERTIFICATION APPLIED
B	B.L.	06.12.24	APPROVAL ISSUE
A	B.L.	18.11.24	PRELIMINARY ISSUE
No.	BY	DATE	DESCRIPTION

HORIZ. DATUM	MT MARGARET GRID	
VERT. DATUM	AHD	
DRG. FILE	0944	DATE
DESIGN	B.L.	NOV '24
DRAWN	C.B.P.	NOV '24

CERTIFICATION

BRETT LANGTREE
RPEQ NO. 11932

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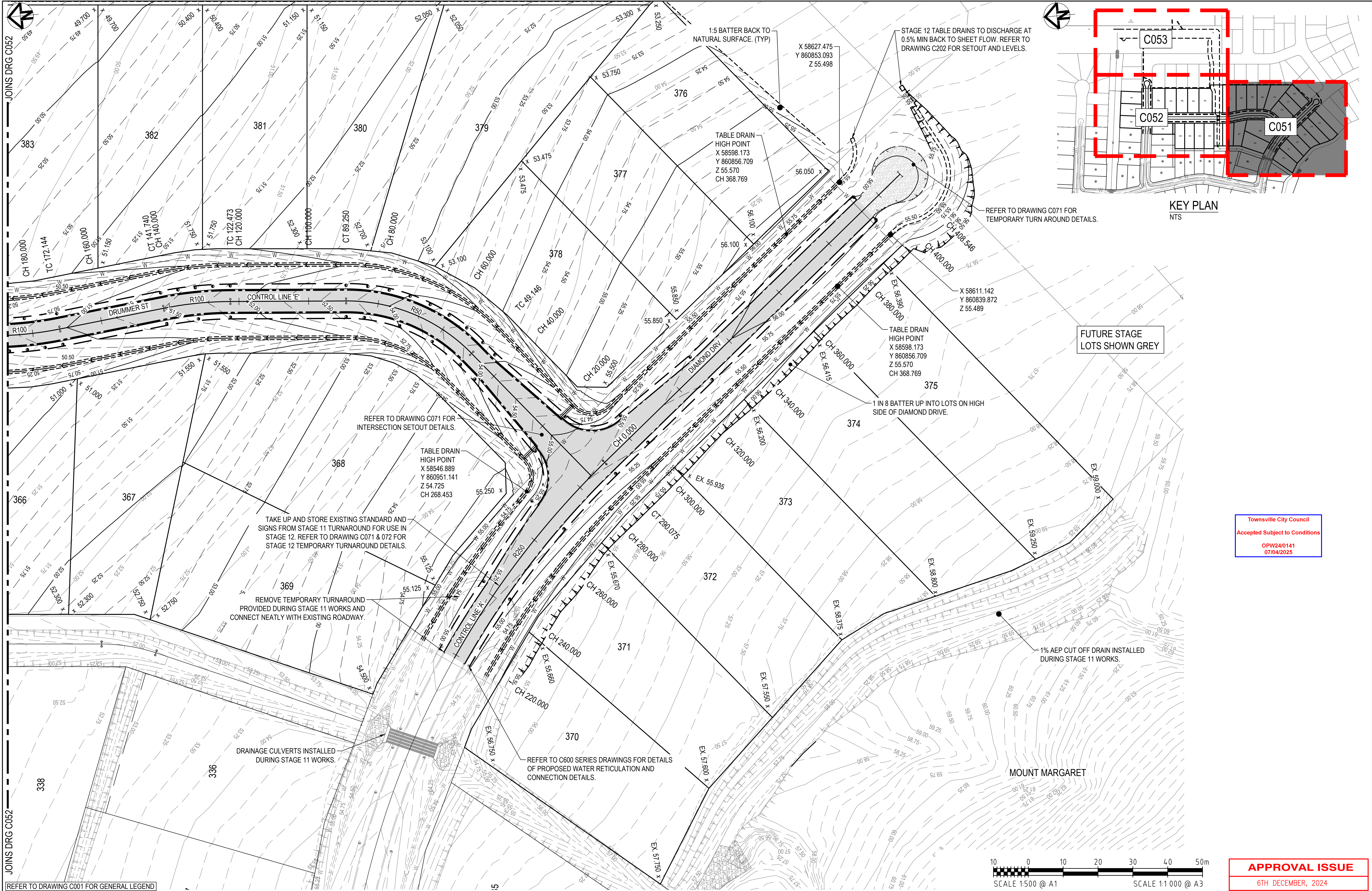
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m e 0400 699 979
brett@langtreeconsulting.com.au

MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS

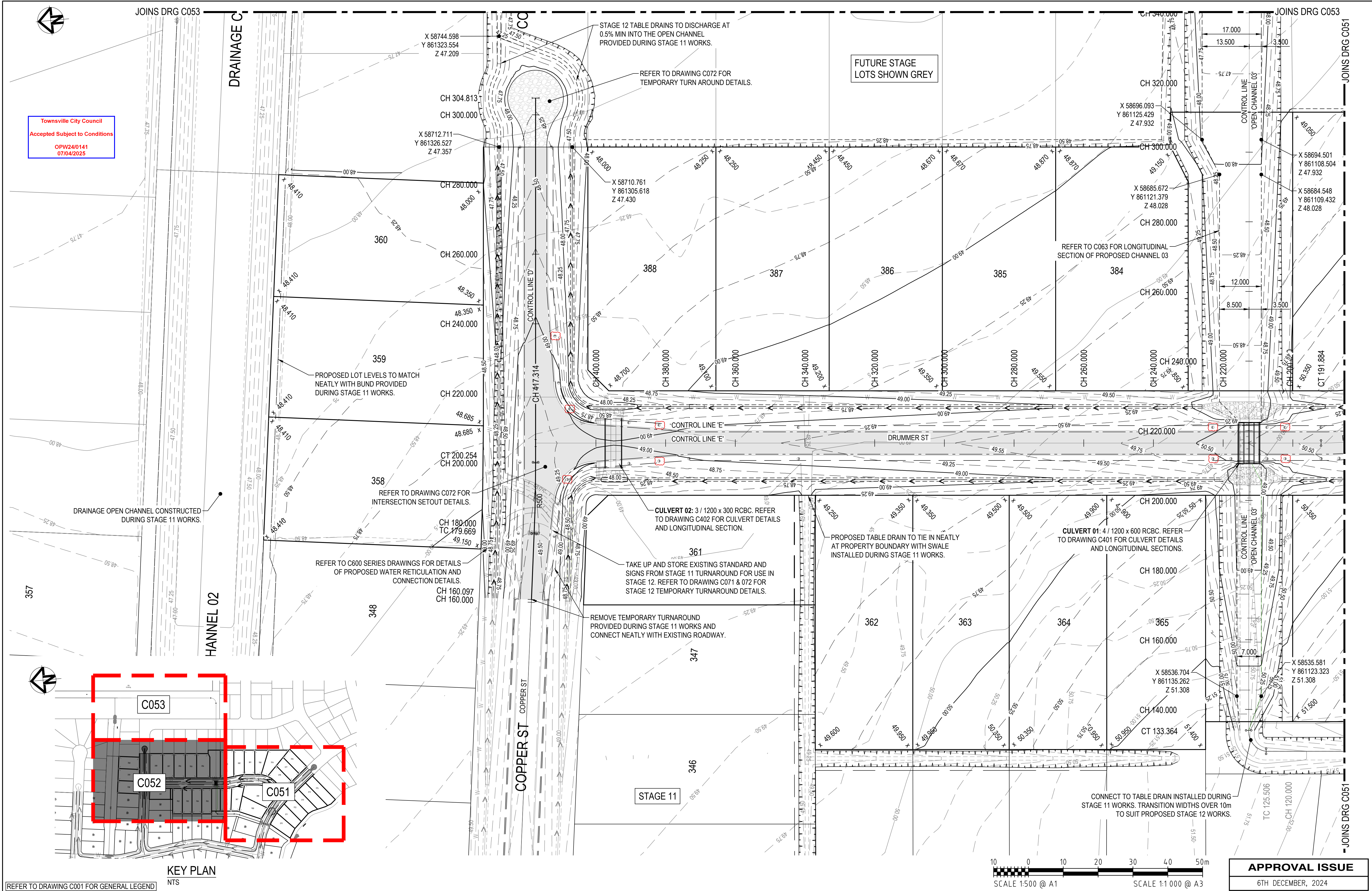
NICKEL STREET
ALICE RIVER, QLD, 4817
DRAINAGE CONTROL LINE SETOUT

SCALE	1:1000			
SHEET	3 OF 28			
REVISION	A	B	C	D
DRG No.	0944 - C003			

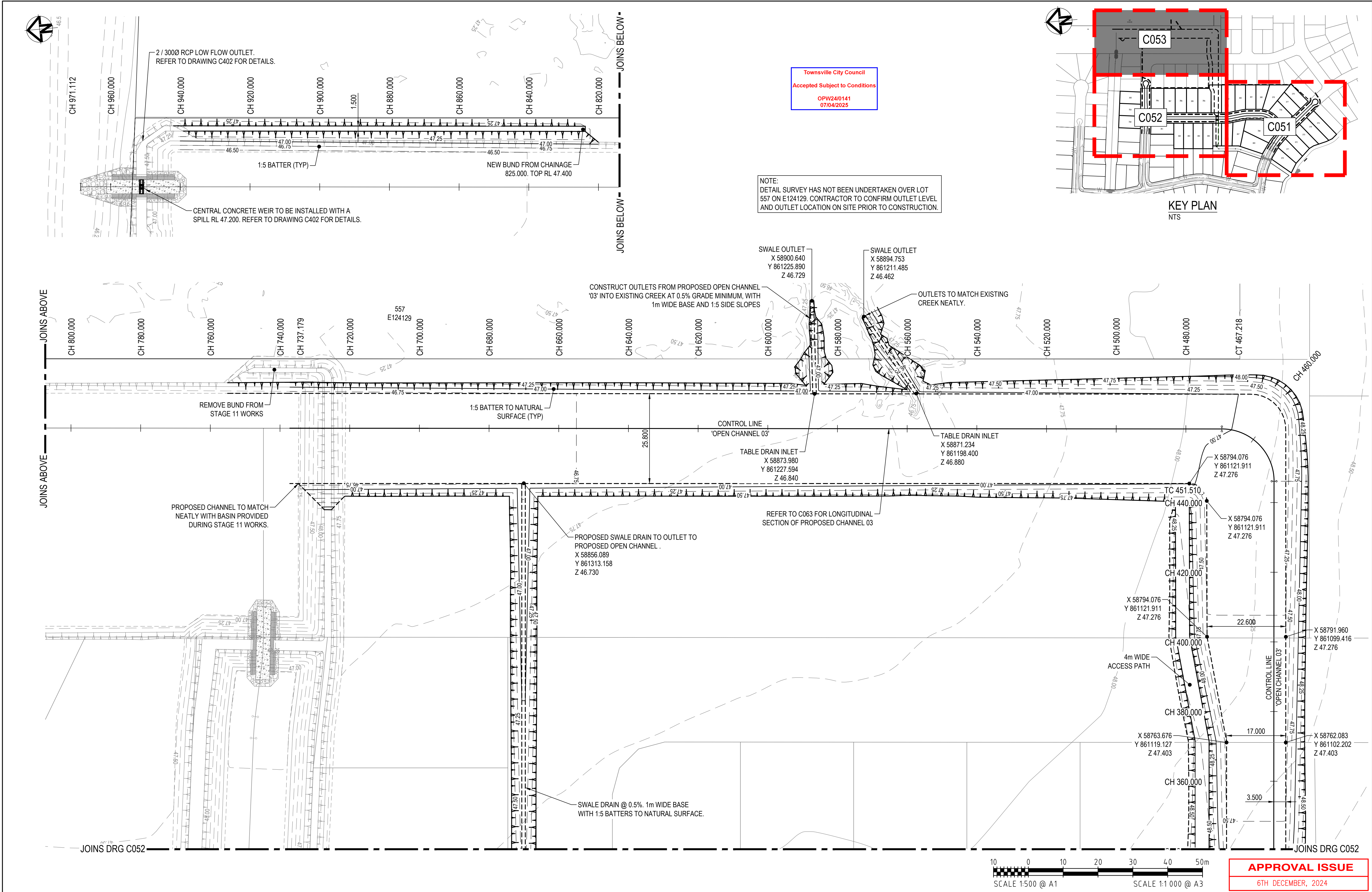


REFER TO DRAWING C001 FOR GENERAL LEGEND

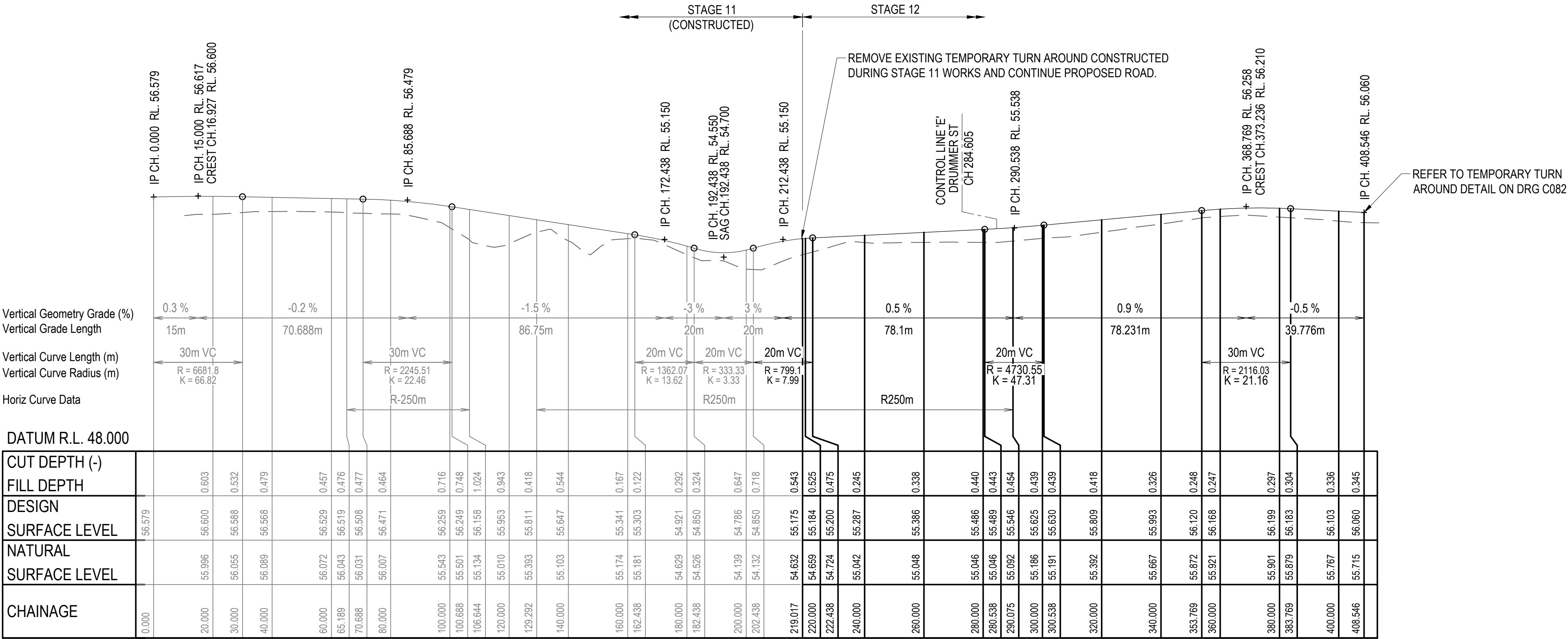
REVISIONS				HORIZ. DATUM	MT MARGARET GRID		CERTIFICATION		 m 0400 699 979 e brett@langtreeconsulting.com.au	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS						SCALE	1:500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
				VERT. DATUM	AHD		Brett Langtree RPEQ NO. 11932			COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 368 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small>	NICKEL STREET ALICE RIVER, QLD, 4817 EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 1						SHEET	4 OF 28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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	A	B.L.	18.11.24	PRELIMINARY ISSUE			DRAWN	C.B.P.									NOV '24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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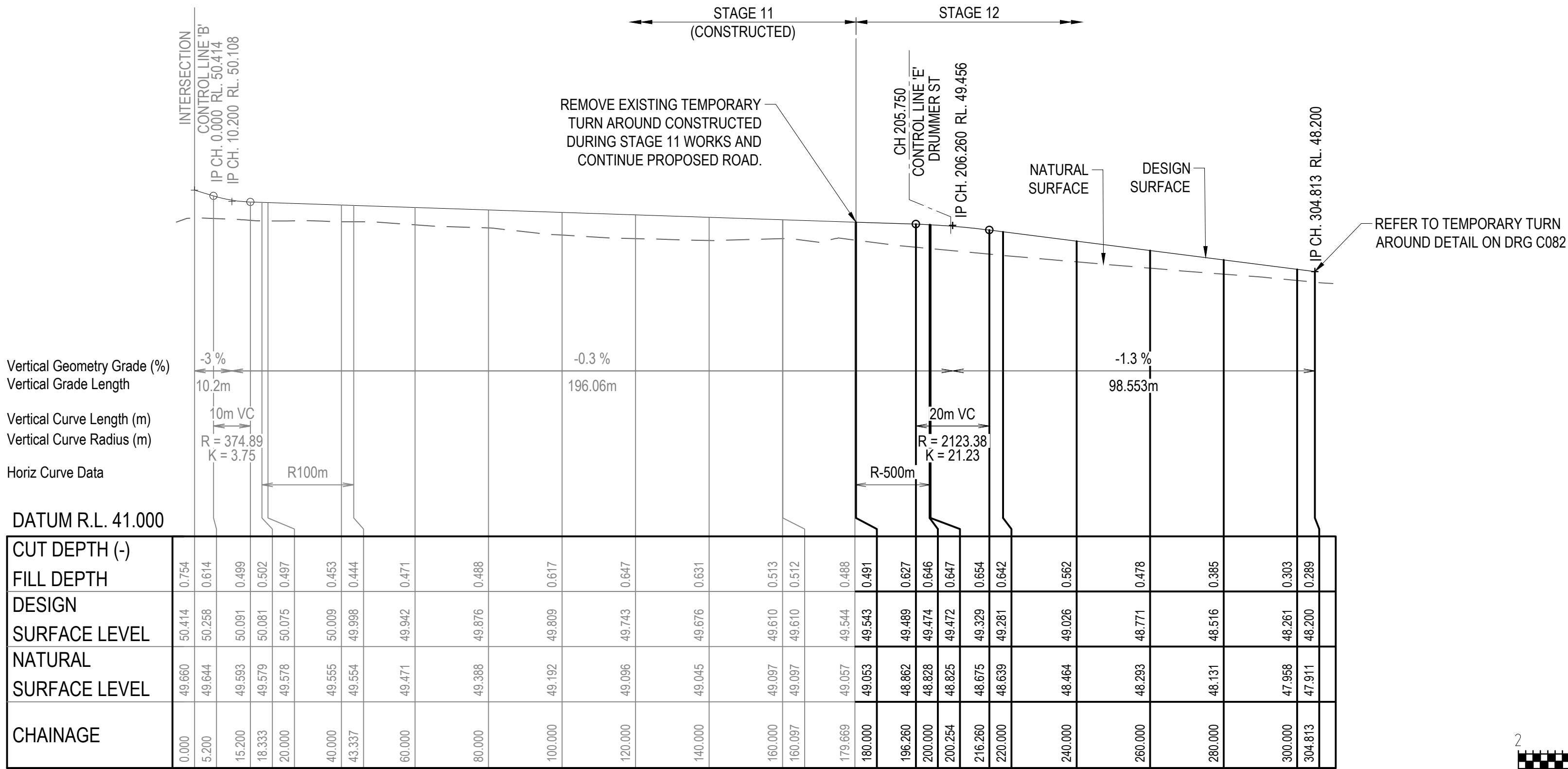
REVISIONS	E	B.L.	20.03.25	APPROVAL ISSUE - ADDITIONAL GUIDEPOSTS	HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION		 m 0400 699 979 e brett@langtreeconsulting.com.au	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS										SCALE	1:500					
	D	B.L.	11.03.25	APPROVAL ISSUE - MINOR TEXT UPDATES	VERT. DATUM		AHD		 BRETT LANGTREE RPEQ NO. 11932			COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 368 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figure dimensions take precedence over scale. Do not scale from this drawing.</small>	NICKEL STREET ALICE RIVER, QLD, 4817 EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 2										SHEET	5 OF 28				
	C	B.L.	06.12.25	APPROVAL ISSUE - MINOR TEXT UPDATES	DRG. FILE		0944		DATE														A B C D E					
	B	B.L.	06.12.24	APPROVAL ISSUE	DESIGN		B.L.		NOV '24																			
	A	B.L.	18.11.24	PRELIMINARY ISSUE	DRAWN		C.B.P.		NOV '24																			
	No.	BY	DATE	DESCRIPTION	HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION																			



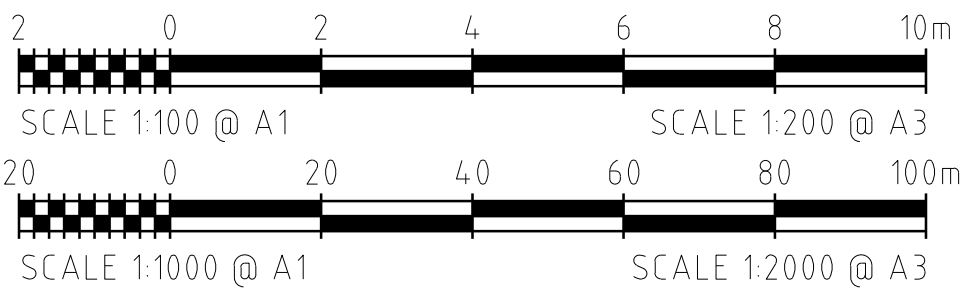
REVISIONS					HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION		 m 0400 699 979 e brett@langtreeconsulting.com.au	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS										SCALE	1:500			
					VERT. DATUM		AHD		 BRETT LANGTREE RPEQ NO. 11932													SHEET	6 OF 28			
	B	B.L.	06.12.24	APPROVAL ISSUE	DRG. FILE		0944		DATE			COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small>		NICKEL STREET ALICE RIVER, QLD, 4817 EARTHWORKS, ROADWORKS AND DRAINAGE SHEET 3	REVISION	A	B									
	A	B.L.	18.11.24	PRELIMINARY ISSUE	DESIGN		B.L.		NOV '24																	
	No.	BY	DATE	DESCRIPTION	DRAWN		C.B.P.		NOV '24										DRG No.	0944 - C053						



CONTROL LINE 'A' LONGITUDINAL SECTION: DIAMOND DRIVE
SCALE 1:1000H 1:100V



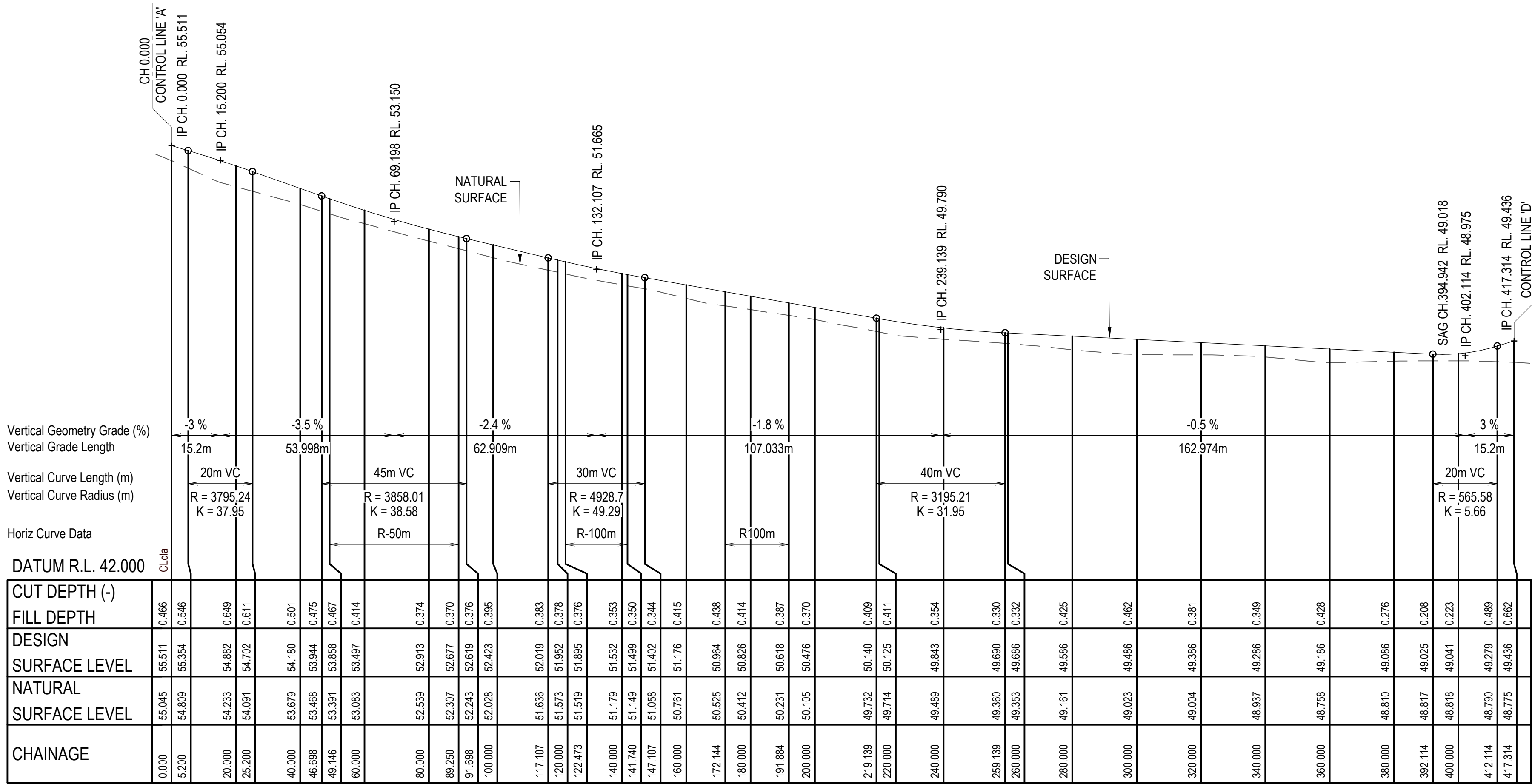
CONTROL LINE 'D' LONGITUDINAL SECTION: COPPER STREET
SCALE 1:1000H 1:100V



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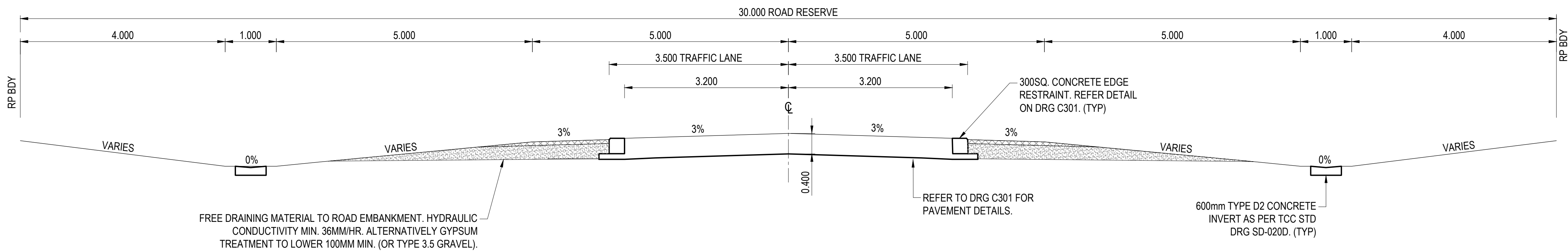
REFER TO DRAWING C002 FOR ROAD SETOUT

REVISIONS				HORIZ. DATUM			MT MARGARET GRID			CERTIFICATION			MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS										SCALE		AS SHOWN					
				VERT. DATUM			AHD			 BRETT LANGTREE RPEQ NO. 11932													 Langtree Consulting m 0400 699 979 e brett@langtreeconsulting.com.au		SHEET		7 OF 28			
				DRG. FILE			0944			DATE			COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 511 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small>			REVISION		A B C D												
				DESIGN			B.L.			NOV '24																				
	No.	BY	DATE	DESCRIPTION			DRAWN			C.B.P.			NOV '24			ROADS LONGITUDINAL SECTIONS SHEET 1										DRG No.		0944 - C061		
D	B.L.	17.03.25	APPROVAL ISSUE - TEXT UPDATED																											
C	B.L.	13.12.24	APPROVAL ISSUE - TEXT REMOVED																											
B	B.L.	06.12.24	APPROVAL ISSUE																											
A	B.L.	18.11.24	PRELIMINARY ISSUE																											

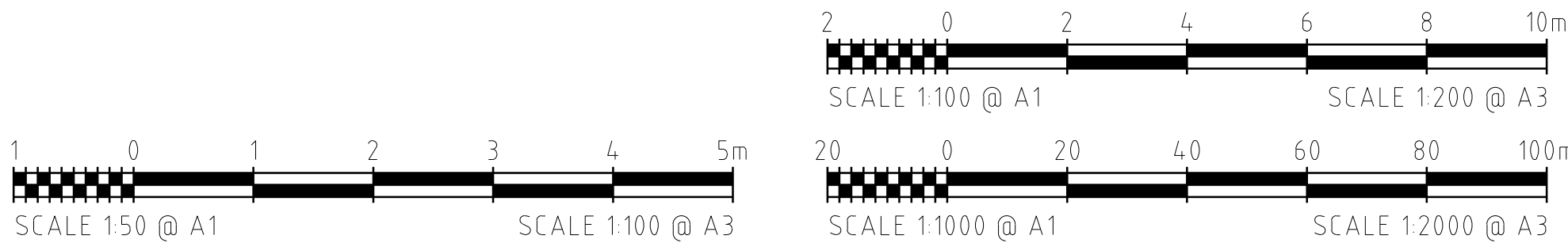


DRUMMER STREET LONGITUDINAL SECTION
SCALE 1:1000H 1:100V

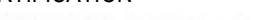

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OPW240141
07/04/2025



TYPICAL ROAD CROSS SECTION
SCALE 1:50



REFER TO DRAWING C002 FOR ROAD SETOUT

REVISIONS					HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION	
					VERT. DATUM		AHD			BRETT LANGTREE RPEQ NO. 11932
					DRG. FILE	0944	DATE			
					DESIGN	B.L.	NOV '24			
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MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS

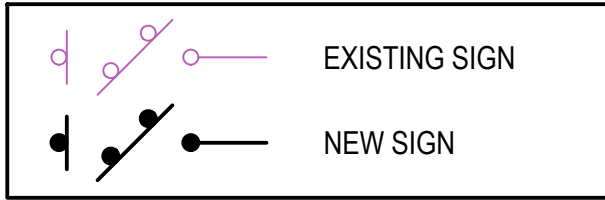
NICKEL STREET
ALICE RIVER, QLD, 4817

ROADS LONGITUDINAL SECTIONS SHEET 2

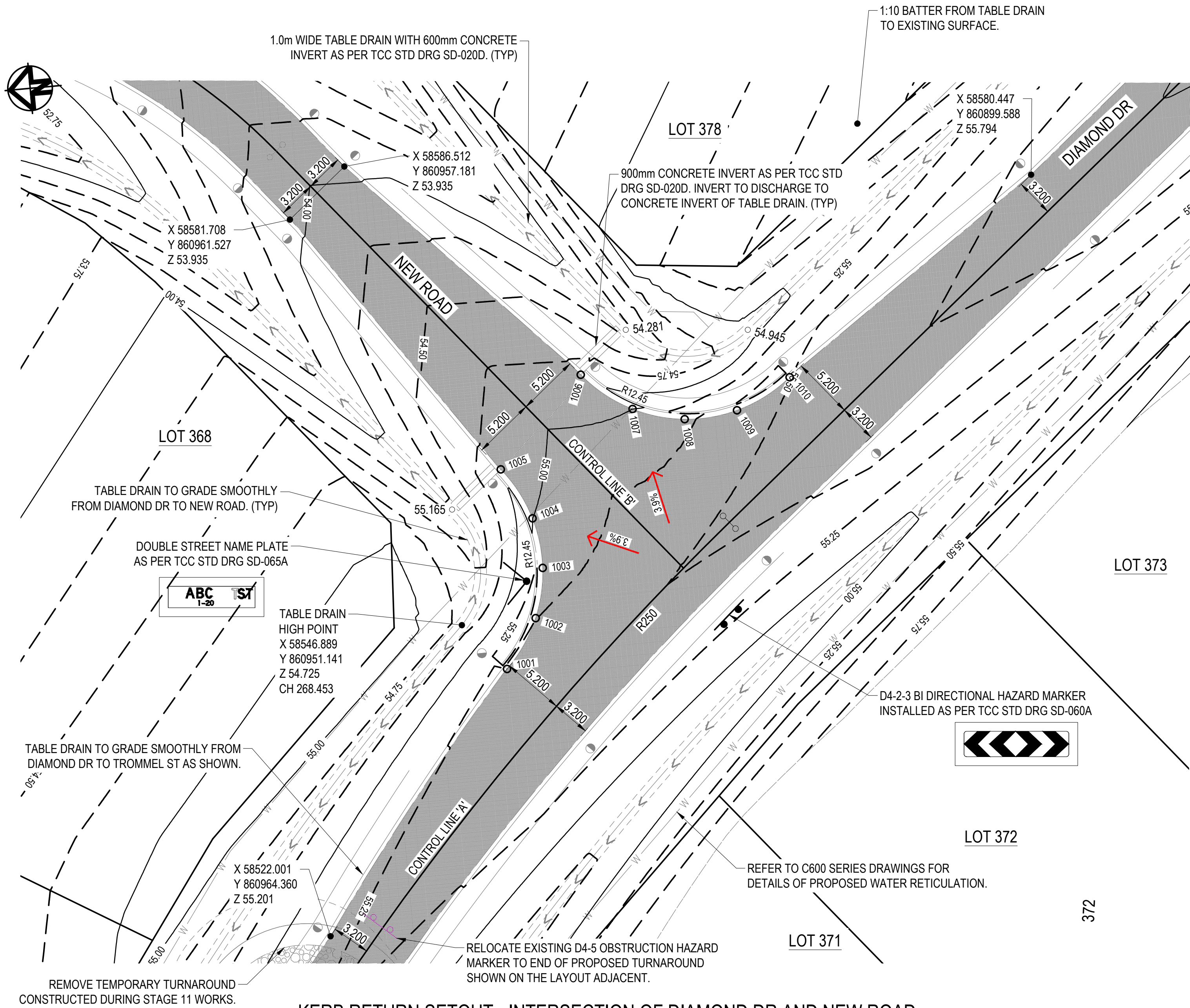
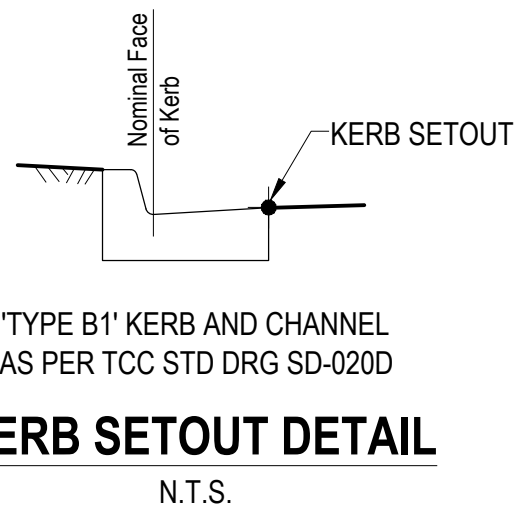
APPROVAL ISSUE
6TH DECEMBER, 2024

SCALE	AS SHOWN			
SHEET	8 OF 28			
REVISION	A	B	C	
DRG No.	0944 - C062			

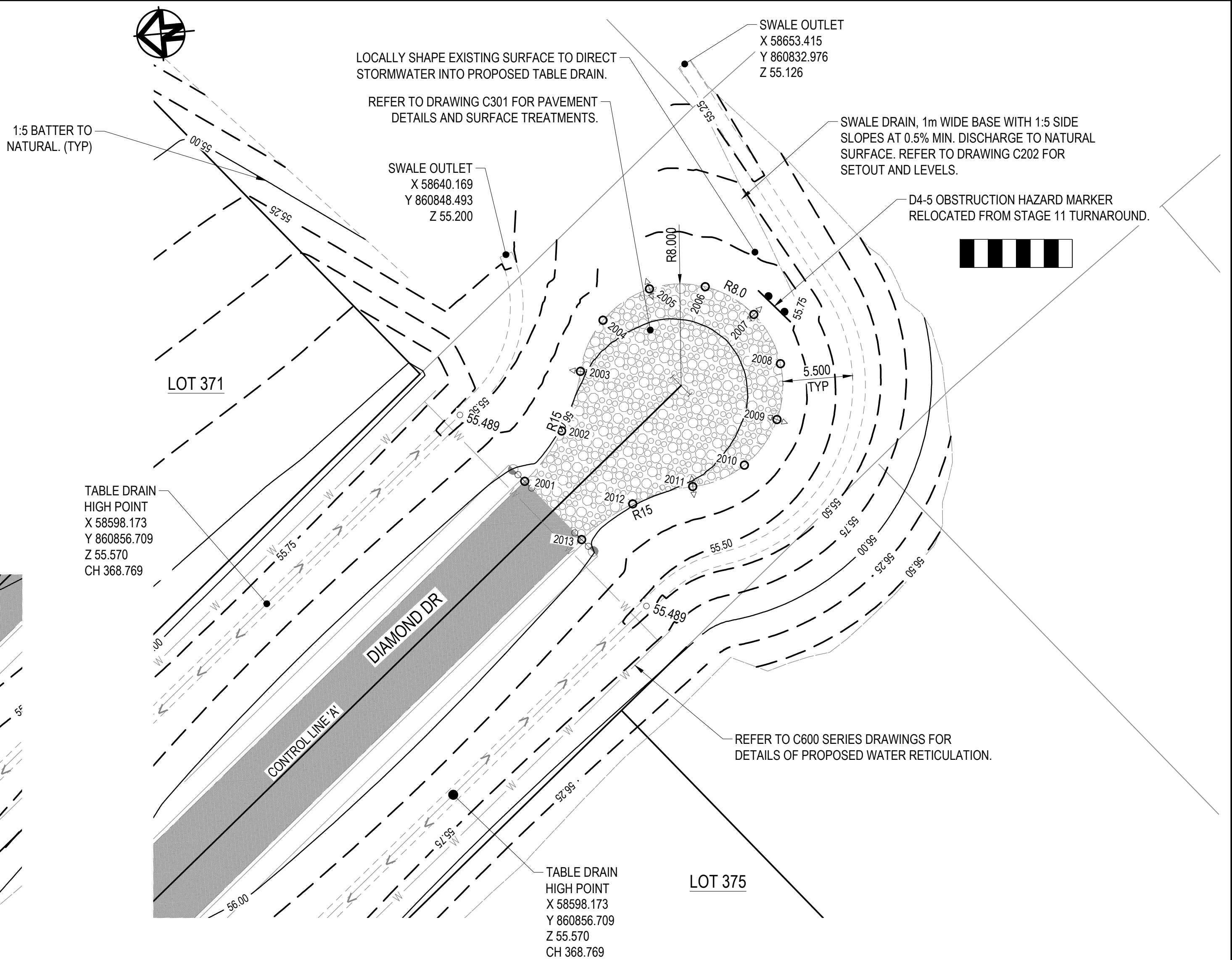
SIGNS LEGEND



INTERSECTION SETOUT TABLE - LIP OF KERB			
POINT	EASTING	NORTHING	LEVEL
1001	58375.919	860947.446	55.272
1002	58547.097	860944.649	55.246
1003	58551.251	860943.659	55.142
1004	58555.496	860944.131	55.000
1005	58559.852	860946.408	54.836
1006	58567.173	860938.954	54.803
1007	58563.885	860934.874	55.001
1008	58562.624	860930.581	55.205
1009	58562.963	860926.119	55.385
1010	58565.329	860921.444	55.490

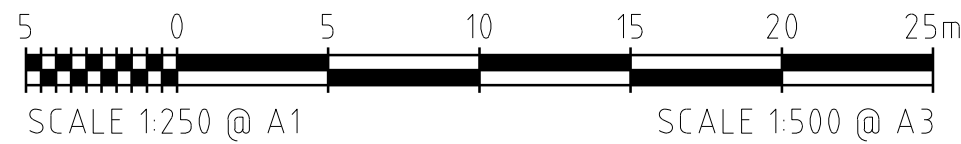


KERB RETURN SETOUT - INTERSECTION OF DIAMOND DR AND NEW ROAD
SCALE 1:250



TEMPORARY CULDESAC SETOUT - DIAMOND DR
SCALE 1:250

CULDESAC SETOUT TABLE - EDGE OF ROADWAY			
POINT	EASTING	NORTHING	LEVEL
2001	58621.801	860848.500	55.949
2002	58625.474	860845.239	55.912
2003	58630.004	860843.341	55.882
2004	58633.842	860841.189	55.861
2005	58635.961	860837.333	55.846
2006	58635.721	860832.940	55.837
2007	58633.195	860829.338	55.834
2008	58629.145	860827.616	55.837
2009	58624.798	860828.297	55.846
2010	58621.469	860831.173	55.861
2011	58620.163	860835.375	55.882
2012	58619.250	860840.201	55.912
2013	58616.826	860844.473	55.949



APPROVAL ISSUE
6TH DECEMBER, 2024

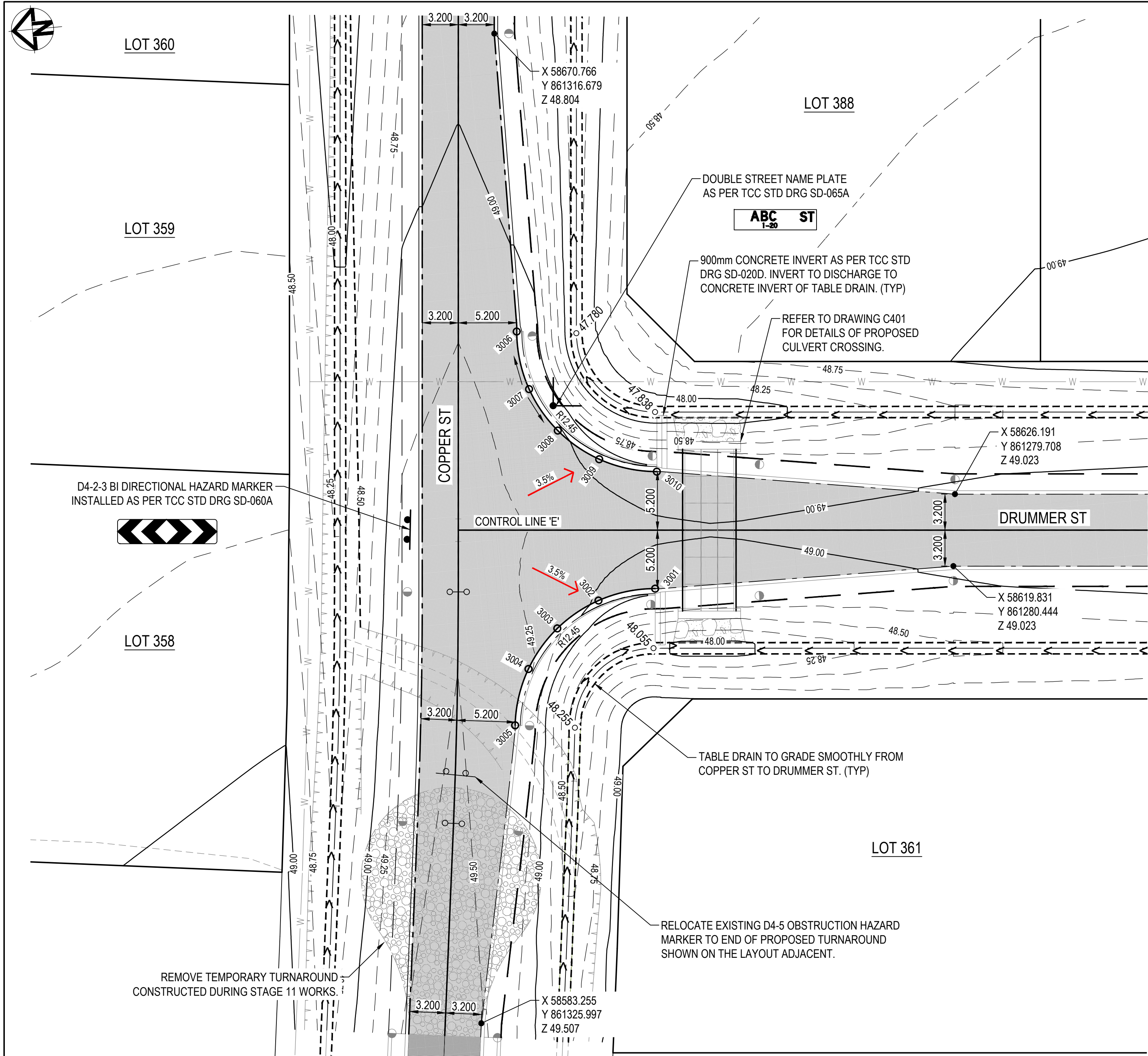
REFER TO DRAWING C001 FOR GENERAL LEGEND

REVISIONS	No.	BY	DATE	DESCRIPTION	HORIZ. DATUM	MT MARGARET GRID	CERTIFICATION
	D	B.L.	19.03.25	APPROVAL ISSUE - KERB RADIUS ADDED	VERT. DATUM	AHD	COPYRIGHT © These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.
	C	B.L.	17.03.25	APPROVAL ISSUE - MINOR UPDATES	DRG. FILE	0944	
	B	B.L.	06.12.24	APPROVAL ISSUE	DESIGN	B.L.	
	A	B.L.	18.11.24	PRELIMINARY ISSUE	DRAWN	C.B.P.	

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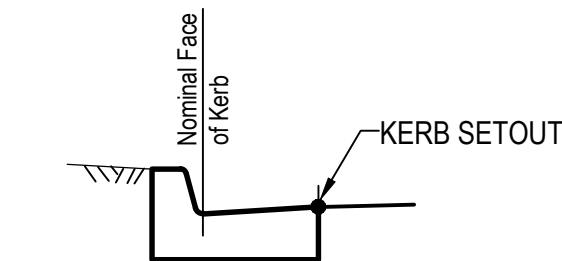
MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS
NICKEL STREET
ALICE RIVER, QLD, 4817
INTERSECTION SETOUT DETAILS SHEET 1

SCALE	AS SHOWN			
SHEET	10 OF 28			
REVISION	A	B	C	D
DRG No.	0944 - C071			

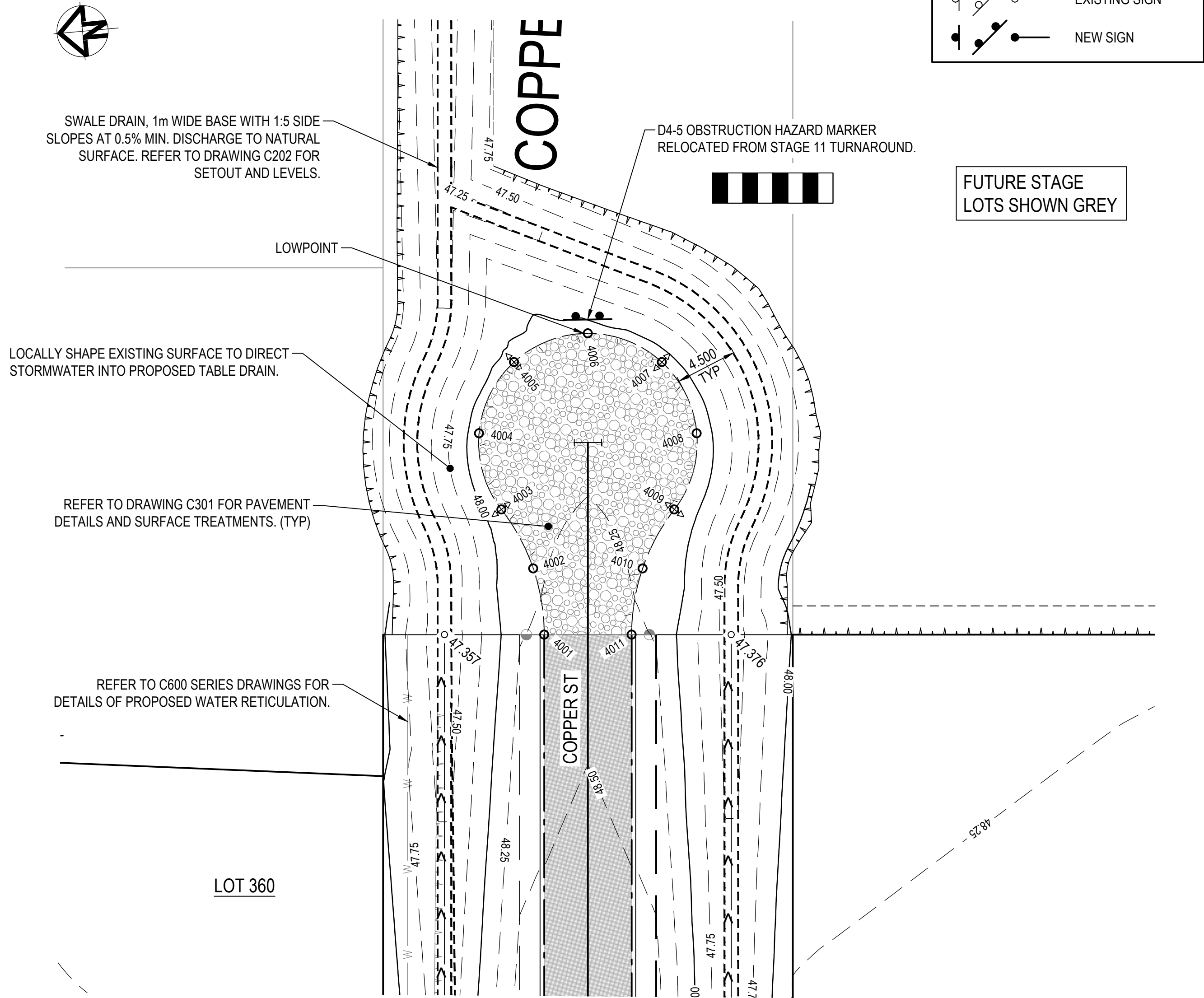


KERB RETURN SETOUT - INTERSECTION OF COPPER ST AND DRUMMER ST
SCALE 1:250

INTERSECTION SETOUT TABLE - LIP OF KERB				
POINT	EASTING	NORTHING	LEVEL	GRADE FORWARD
3001	58620.300	861307.016	48.883	+1.60%
3002	58619.707	861312.132	48.976	+3.55%
3003	58617.580	861316.006	49.134	+3.42%
3004	58614.233	861318.893	49.286	+1.41%
3005	58609.351	861320.537	49.359	-
3006	58644.194	861317.148	49.082	+0.3%
3007	58638.992	861316.526	49.098	-1.47%
3008	58635.090	861314.335	49.032	-1.93%
3009	58632.216	861310.906	48.945	-1.19%
3010	58630.642	861305.908	48.882	-



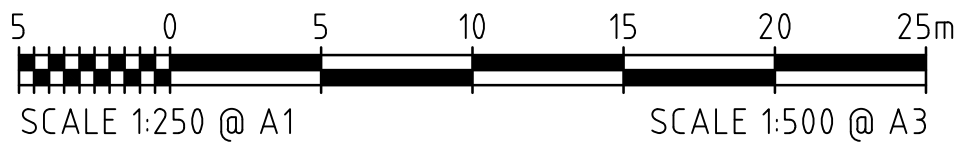
'TYPE B1' KERB AND CHANNEL
AS PER TCC STD DRG SD-020D
KERB SETOUT DETAIL
N.T.S.



TEMPORARY CULDESAC SETOUT - COPPER ST
SCALE 1:250


CULDESAC SETOUT TABLE - EDGE OF ROADWAY				
POINT	EASTING	NORTHING	LEVEL	GRADE FORWARD
4001	58712.033	861319.259	48.283	+1.15%
4002	58716.933	861319.610	48.226	+0.93%
4003	58721.456	861321.524	48.180	+0.70%
4004	58727.155	861322.641	48.139	+0.40%
4005	58732.107	861319.608	48.115	+0.15%
4006	58733.704	861314.024	48.106	-0.13%
4007	58731.103	861308.832	48.114	-0.40%
4008	58725.675	861306.767	48.138	-0.70%
4009	58720.280	861308.918	48.179	-0.93%
4010	58716.189	861311.636	48.225	-1.15%
4011	58711.439	861312.887	48.282	-

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6TH DECEMBER, 2024

REFER TO DRAWING C001 FOR GENERAL LEGEND

REVISIONS	E	B.L.	19.03.25	APPROVAL ISSUE - KERB RADIUS ADDED	HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION	
	D	B.L.	17.03.25	APPROVAL ISSUE - MINOR UPDATES	VERT. DATUM		AHD			
	C	B.L.	12.03.25	APPROVAL ISSUE - MINOR UPDATES	DRG. FILE		0944	DATE	COPYRIGHT ©	
	B	B.L.	06.12.24	APPROVAL ISSUE	DESIGN		B.L.	NOV '24	<p>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</p>	
	A	B.L.	18.11.24	PRELIMINARY ISSUE	DRAWN		C.B.P.	NOV '24		
	No.	BY	DATE	DESCRIPTION						


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MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS

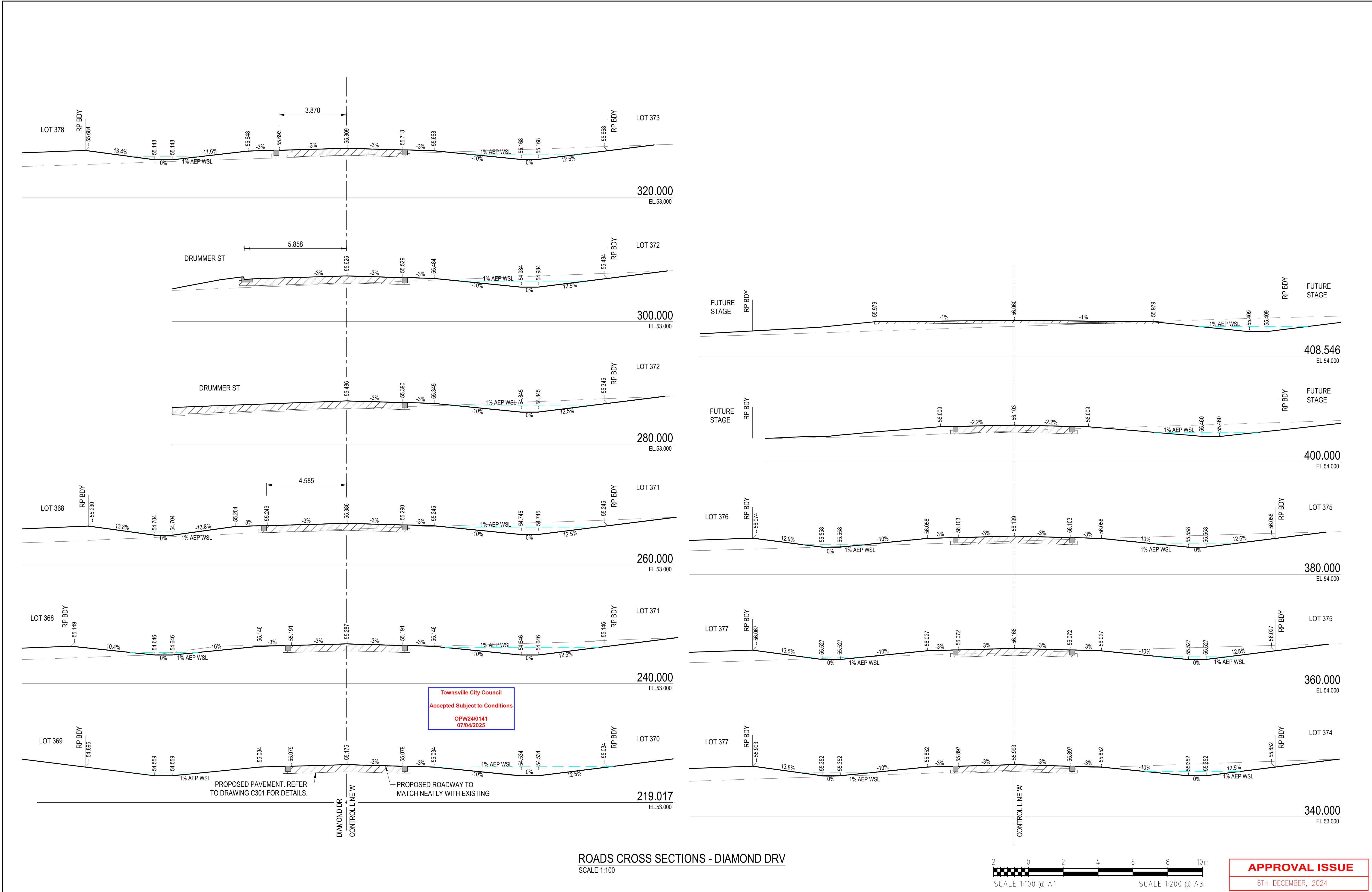
NICKEL STREET
ALICE RIVER, QLD, 4817
INTERSECTION SETOUT DETAILS SHEET 2

SCALE AS SHOWN

SHEET 11 OF 28

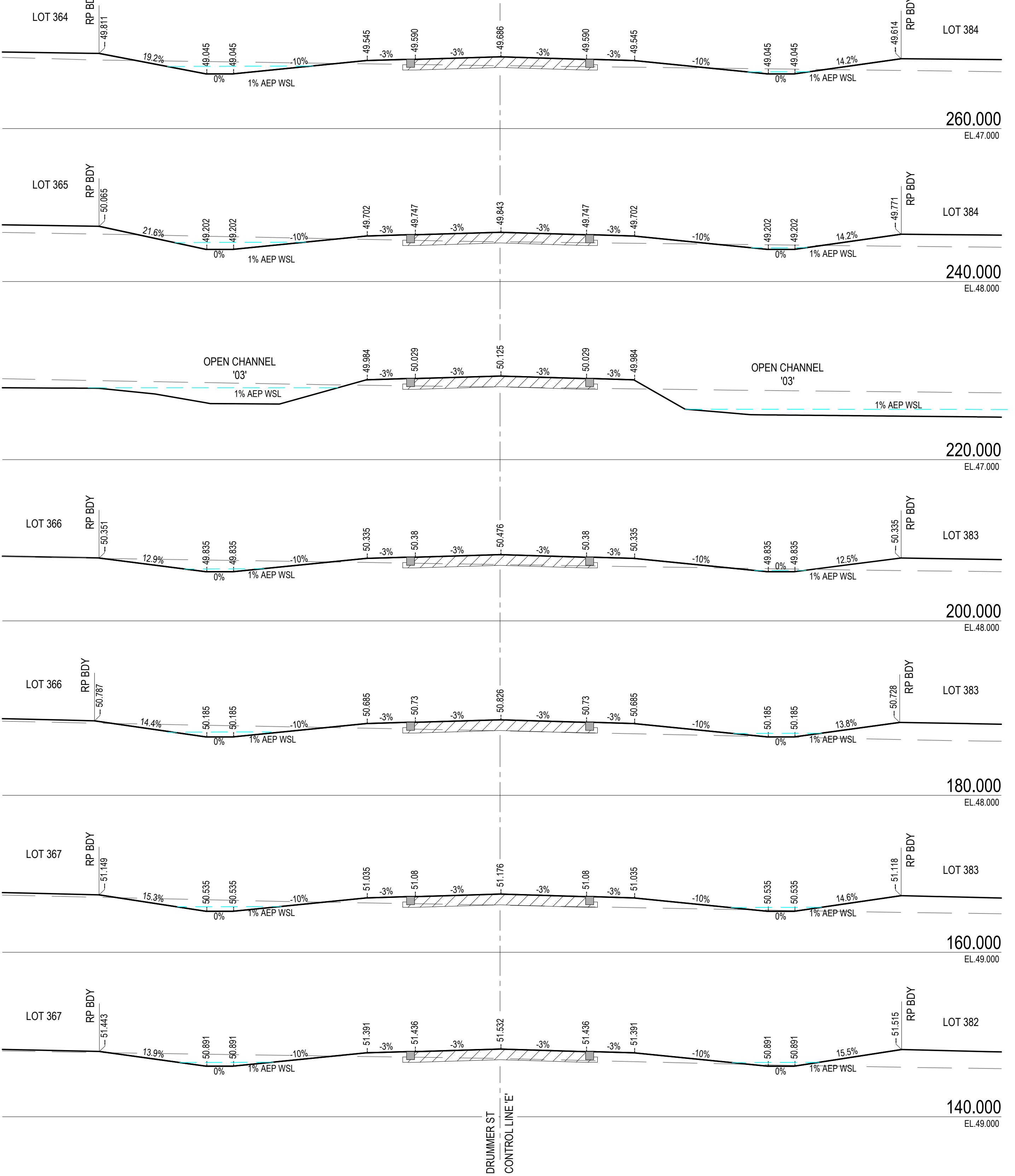
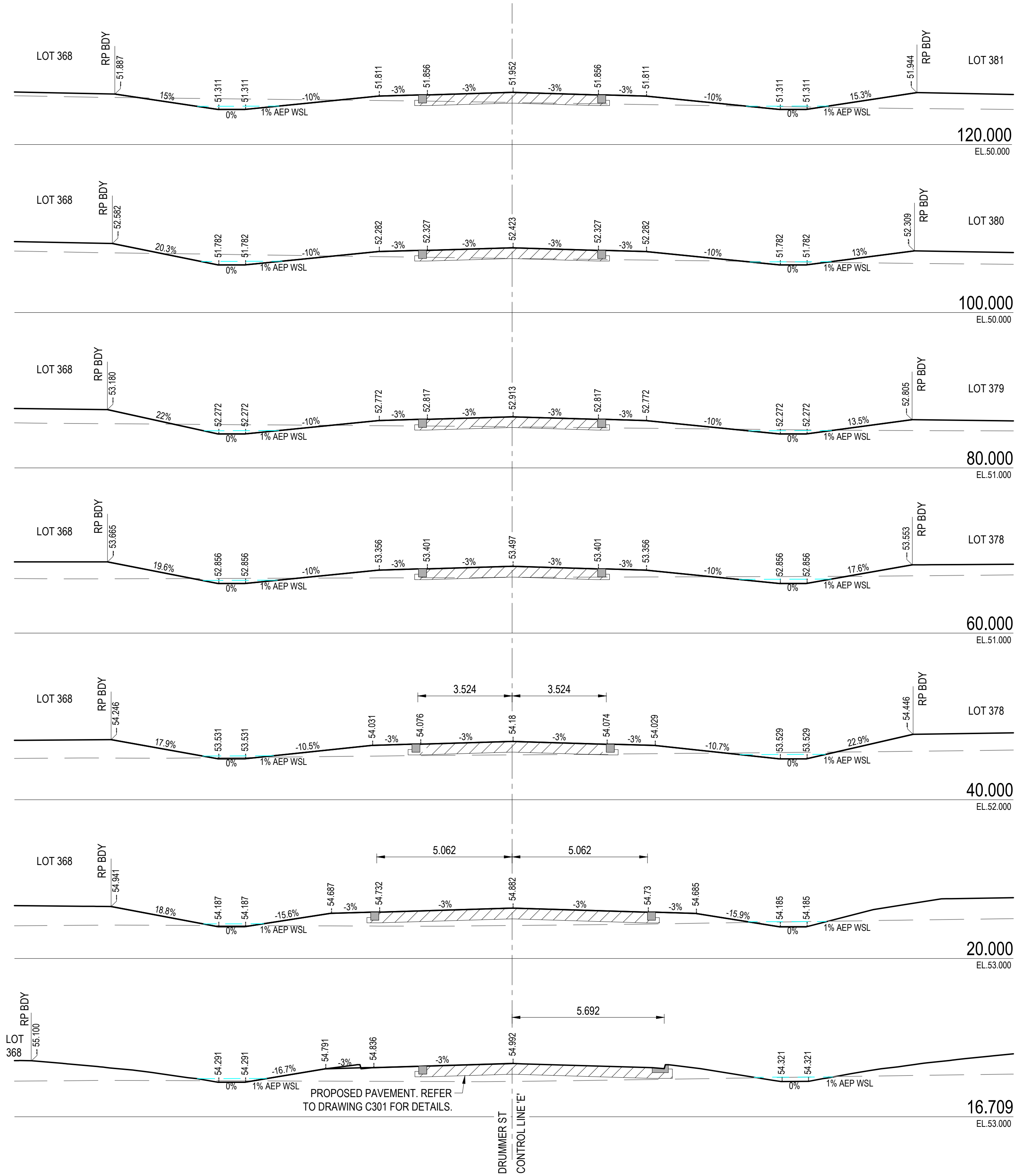
REVISION A B C D E

DRG No. 0944 - C072

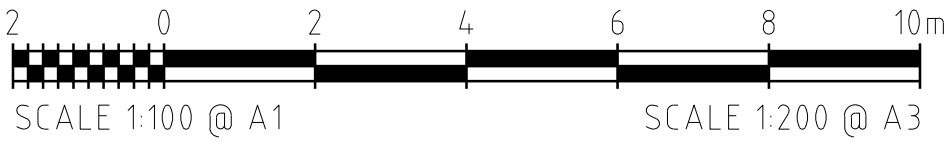


REVISIONS					HORIZ. DATUM	MT MARGARET GRID		CERTIFICATION  BRETT LANGTREE RPEQ NO. 11932	 m 0400 699 979 e brett@langtreeconsulting.com.au	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS						SCALE	1:100			
					VERT. DATUM	AHD										SHEET	12 OF 28			
	B	B.L.	13.03.25	APPROVAL ISSUE - 1% AEP WSL UPDATE	DRG. FILE	0944	DATE			COPYRIGHT © These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 368 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purposes for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.	REVISION	A	B							
	A	B.L.	06.12.24	APPROVAL ISSUE	DESIGN	B.L.	NOV '24				DRG No.	0944 - C081								
	No.	BY	DATE	DESCRIPTION	DRAWN	C.B.P.	NOV '24				ROADS CROSS SECTIONS SHEET 1									

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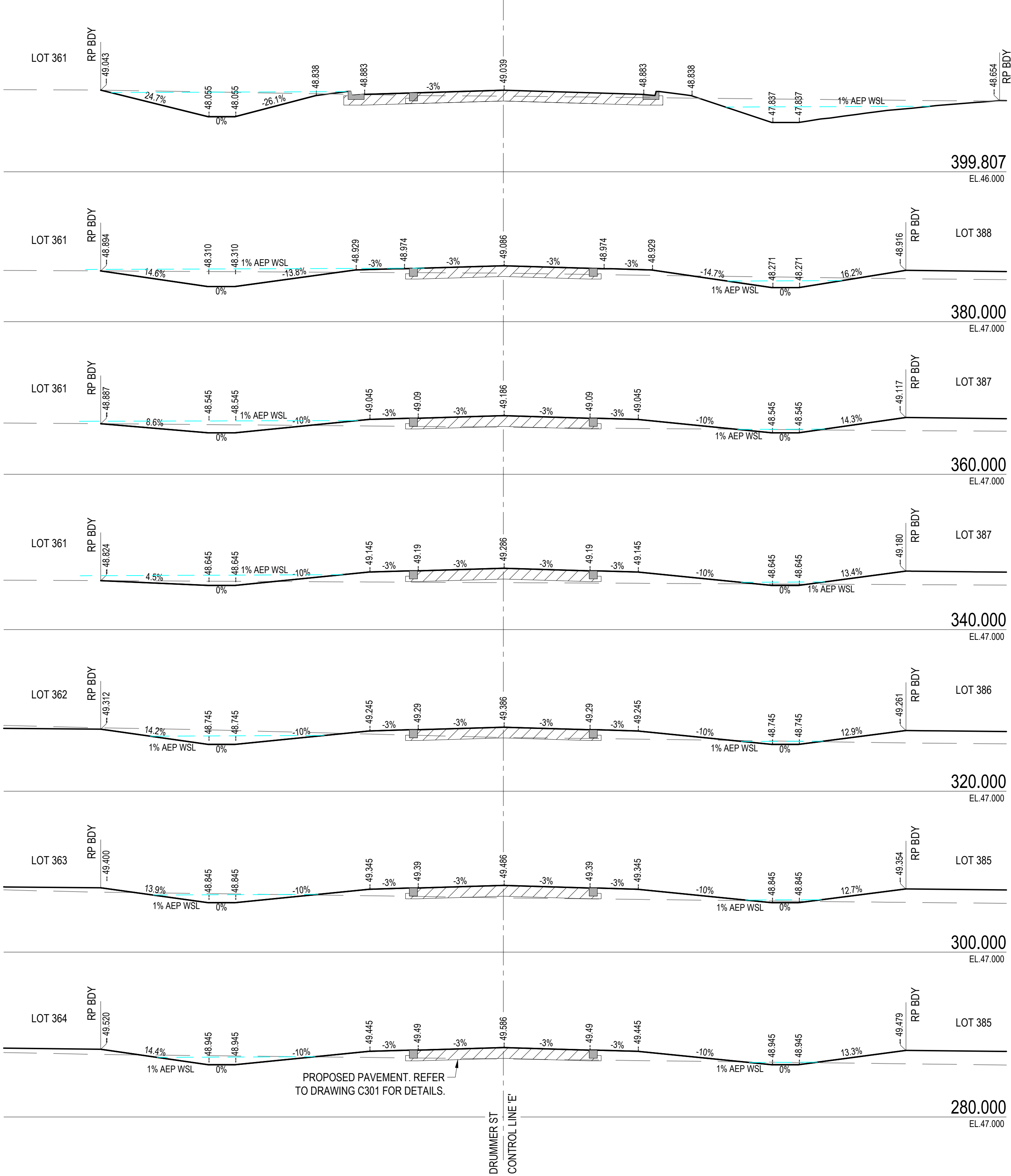
ROADS CROSS SECTIONS - DRUMMER ST
SCALE 1:100



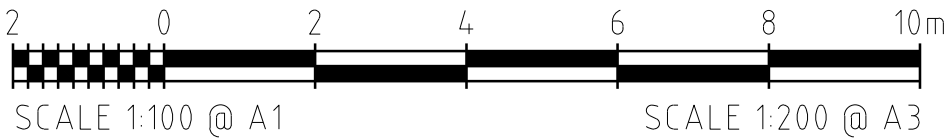
APPROVAL ISSUE
6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM	MT MARGARET GRID		<div> Langtree Consulting m 0400 699 979 e brett@langtreeconsulting.com.au</div>	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS NICKEL STREET ALICE RIVER, QLD, 4817 , ROADS CROSS SECTIONS SHEET 2	SCALE	1:100				
					VERT. DATUM	AHD				SHEET	13 OF 28				
	B	B.L.	13.03.25	APPROVAL ISSUE - 1% AEP WSL UPDATE	DRG. FILE	0944	DATE			REVISION	A	B			
	A	B.L.	06.12.24	APPROVAL ISSUE	DESIGN	B.L.	NOV '24								
	No.	BY	DATE	DESCRIPTION	DRAWN	C.B.P.	NOV '24								
							CERTIFICATION  BRETT LANGTREE RPEQ NO. 11932								
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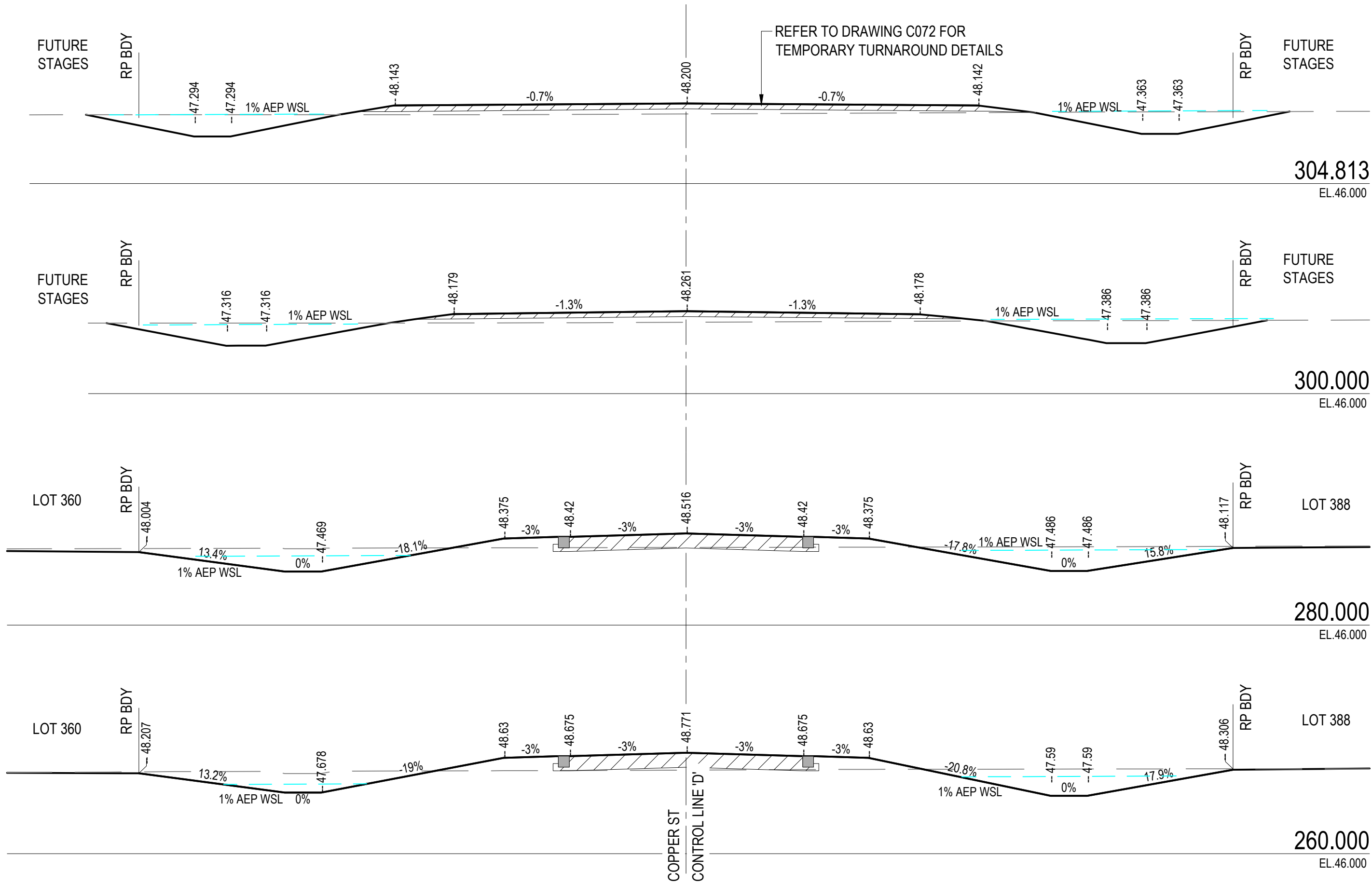
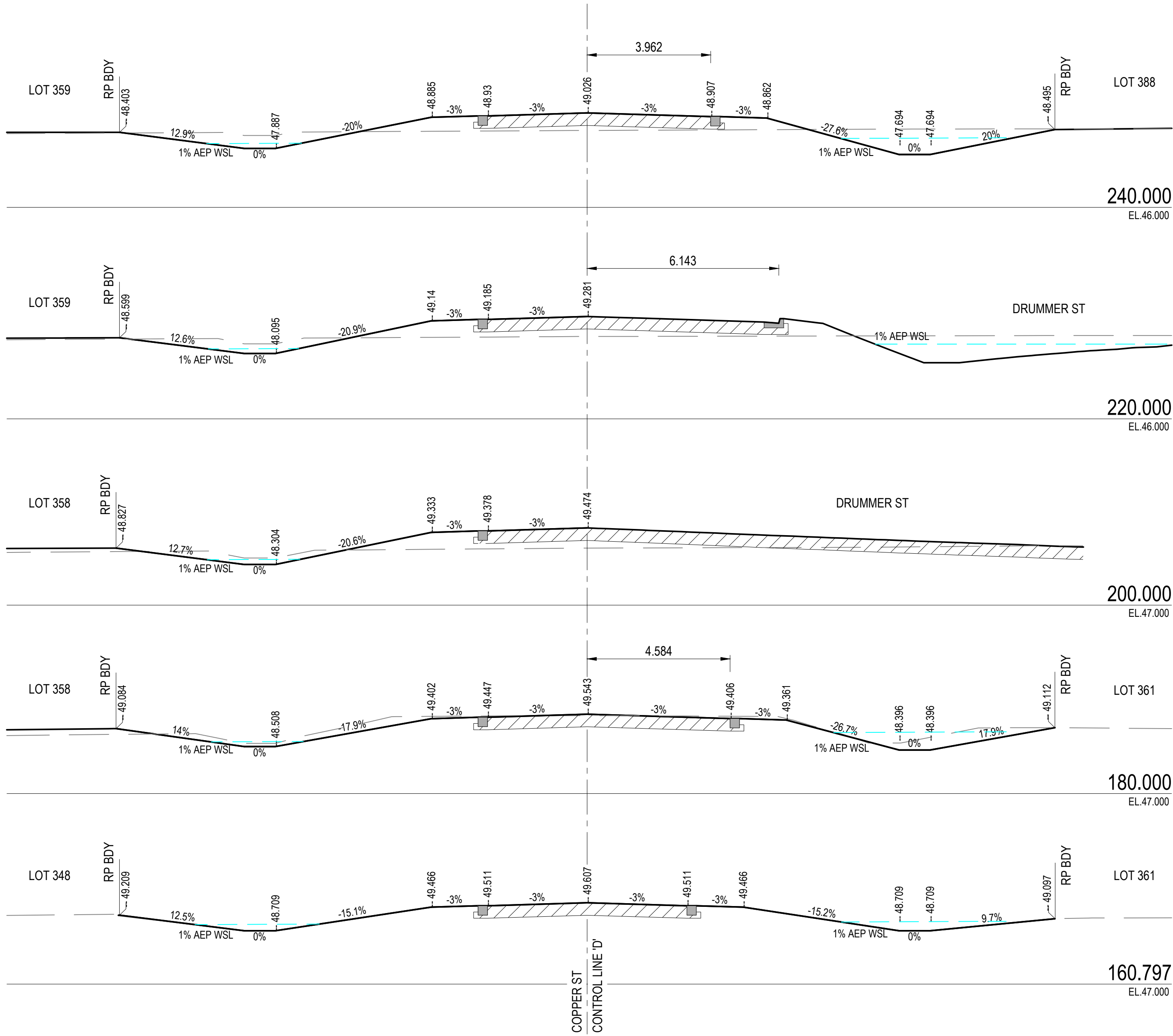
ROADS CROSS SECTIONS - DRUMMER ST (CONT.)
SCALE 1:100



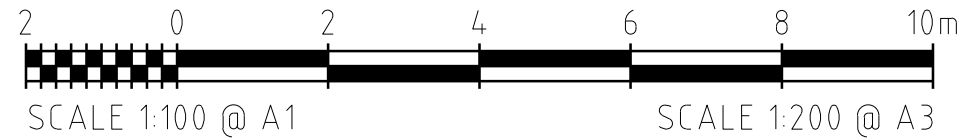
APPROVAL ISSUE
6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM	MT MARGARET GRID		<div> Langtree Consulting m 0400 699 979 e brett@langtreeconsulting.com.au</div>	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS NICKEL STREET ALICE RIVER, QLD, 4817 , ROADS CROSS SECTIONS SHEET 3	SCALE	1:100			
					VERT. DATUM	AHD				SHEET	14 OF 28			
	B	B.L.	13.03.25	APPROVAL ISSUE - 1% AEP WSL UPDATE	DRG. FILE	0944	DATE			REVISION	A	B		
	A	B.L.	06.12.24	APPROVAL ISSUE	DESIGN	B.L.	NOV '24							
	No.	BY	DATE	DESCRIPTION	DRAWN	C.B.P.	NOV '24							DRG No.

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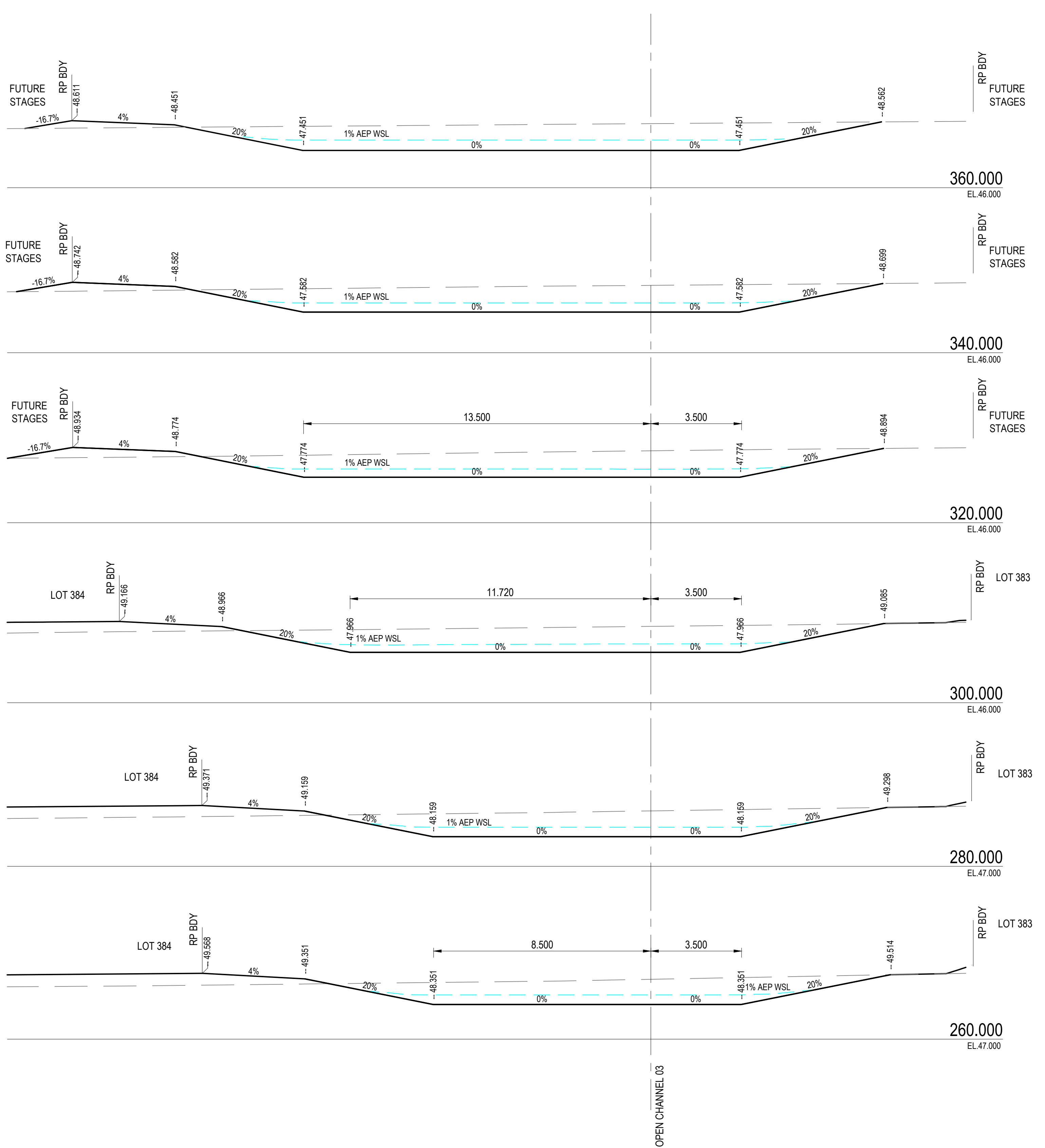
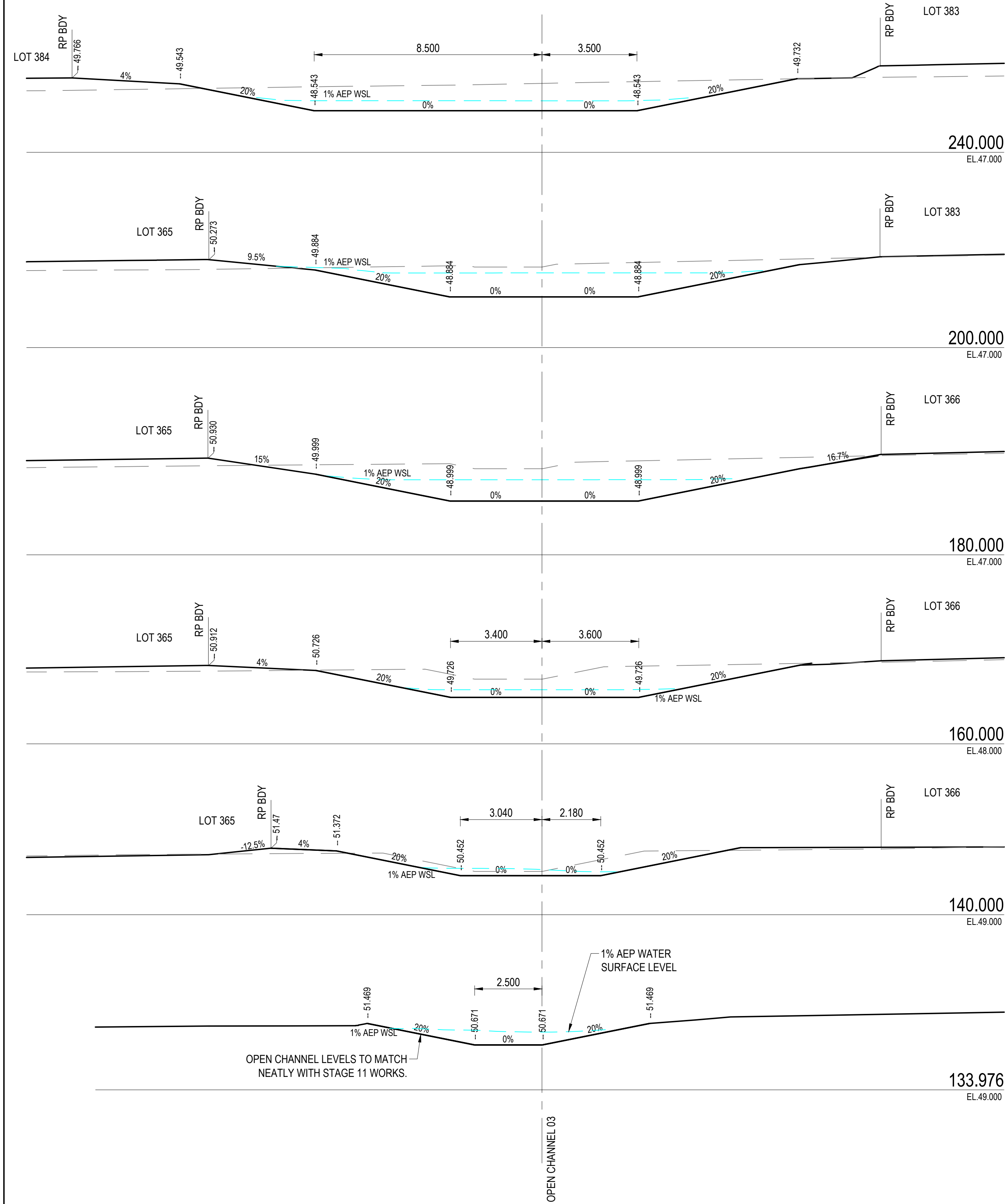


ROADS CROSS SECTIONS - COPPER ST
SCALE 1:100

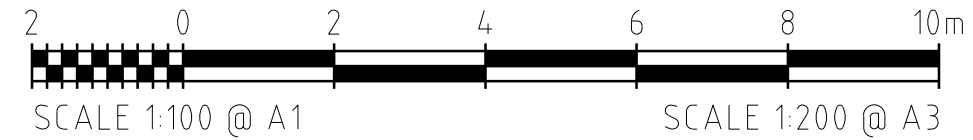


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6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM	MT MARGARET GRID		CERTIFICATION  BRETT LANGTREE RPEQ NO. 11932	 m 0400 699 979 e brett@langtreeconsulting.com.au	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS					SCALE	1:100						
					VERT. DATUM	AHD									SHEET	15 OF 28						
	B	B.L.	13.03.25	APPROVAL ISSUE - 1% AEP WSL UPDATE	DRG. FILE	0944	DATE			COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small>	NICKEL STREET ALICE RIVER, QLD, 4817 , ROADS CROSS SECTIONS SHEET 4					REVISION	A	B				
	A	B.L.	06.12.24	APPROVAL ISSUE	DESIGN	B.L.	NOV '24															
	No.	BY	DATE	DESCRIPTION	DRAWN	C.B.P.	NOV '24									DRG No.	0944 - C084					

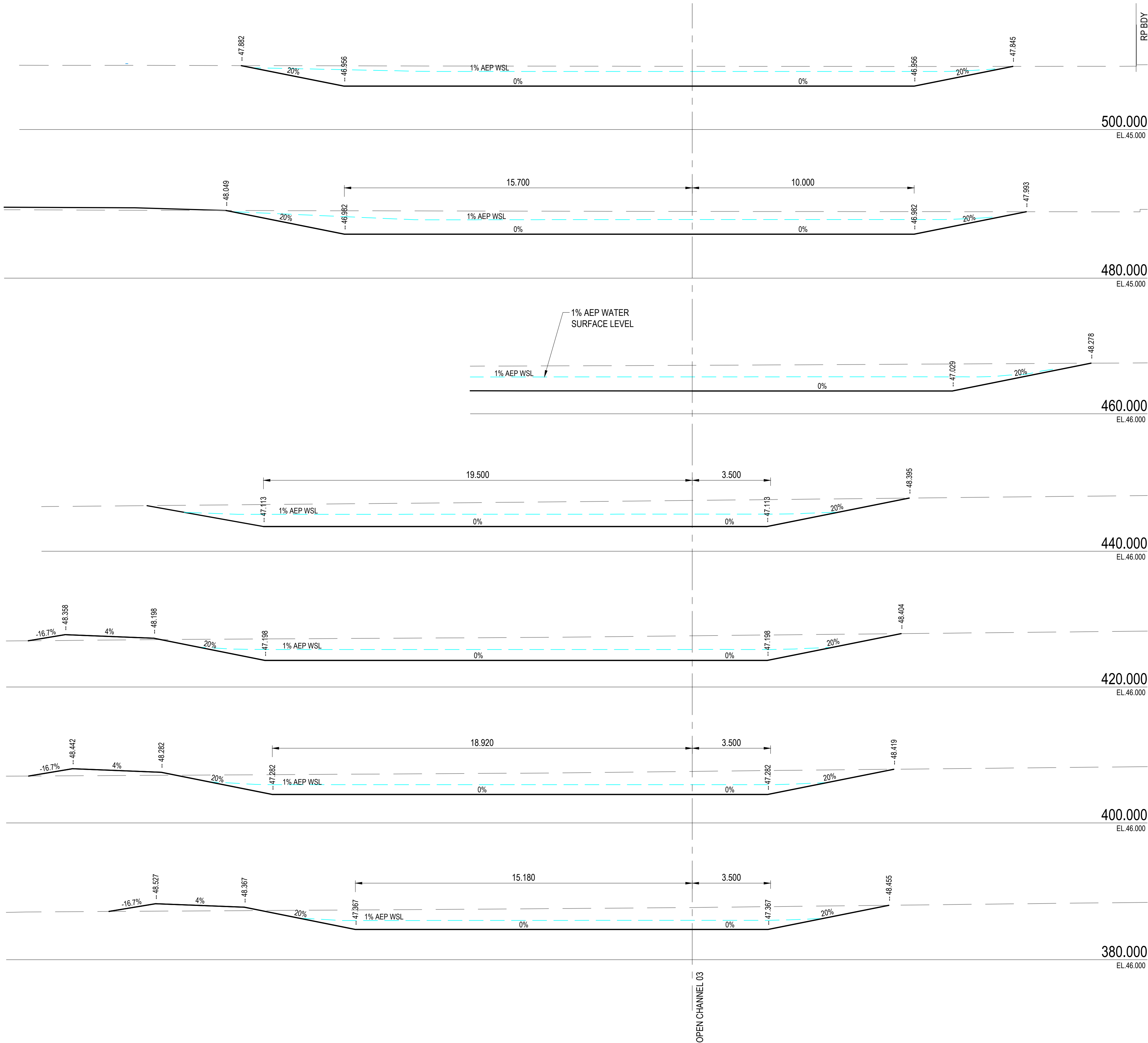


DRAINAGE CROSS SECTIONS OPEN CHANNEL '03'
SCALE 1:100



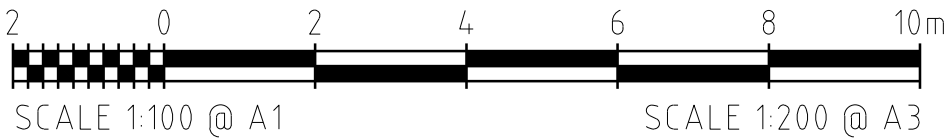
APPROVAL ISSUE
6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM	MT MARGARET GRID		CERTIFICATION  BRETT LANGTREE RPEQ NO. 11932	 m 0400 699 979 e brett@langtreeconsulting.com.au	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS NICKEL STREET ALICE RIVER, QLD, 4817 , OPEN CHANNEL SECTIONS SHEET 1	SCALE	1:100				
					VERT. DATUM	AHD					SHEET	16 OF 28				
	A	B.L.	06.12.24	APPROVAL ISSUE	DRG. FILE	0944	DATE	COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACK 29 611 368 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small>			REVISION	A				
	No.	BY	DATE	DESCRIPTION	DESIGN	B.L.	NOV '24	DRAWN			C.B.P.	NOV '24	DRG No.	0944 - C085		



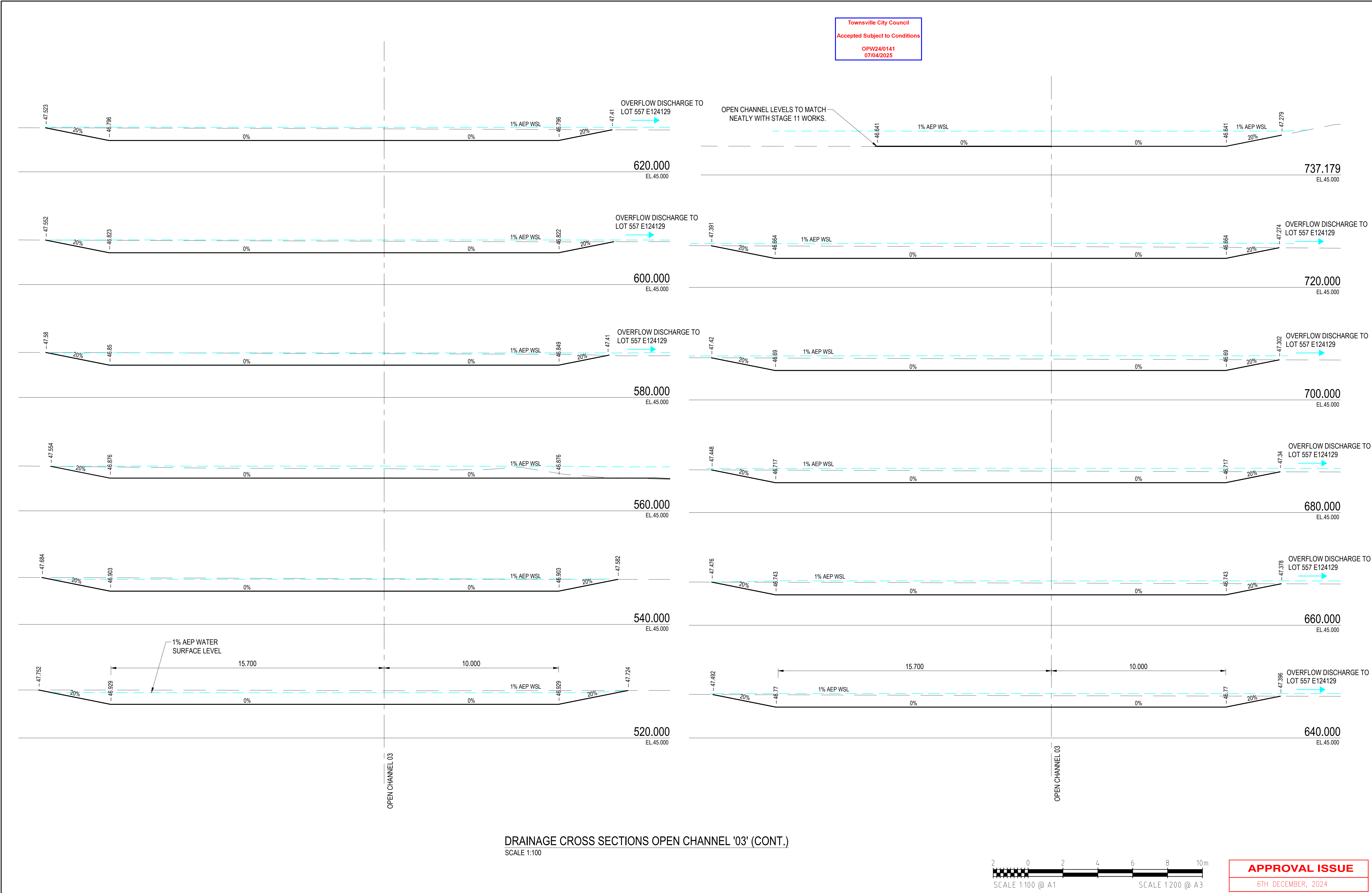
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DRAINAGE CROSS SECTIONS OPEN CHANNEL '03' (CONT.)
SCALE 1:100



APPROVAL ISSUE
6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM	MT MARGARET GRID		<div>CERTIFICATION</div> <div></div> <div>BRETT LANGTREE RPEQ NO. 11932</div> <div>COPYRIGHT ©</div> <div><small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small></div>	<div></div> <div>m e</div> <div>0400 699 979 brett@langtreeconsulting.com.au</div>	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS	SCALE	1:100								
						VERT. DATUM	AHD					SHEET	17 OF 28							
	A	B.L.	06.12.24	APPROVAL ISSUE	DRG. FILE	0944	DATE				REVISION	A								
	No.	BY	DATE	DESCRIPTION	DESIGN	B.L.	NOV '24					DRG No.	0944 - C086							
					DRAWN	C.B.P.	NOV '24													
											NICKEL STREET ALICE RIVER, QLD, 4817 , OPEN CHANNEL SECTIONS SHEET 2									

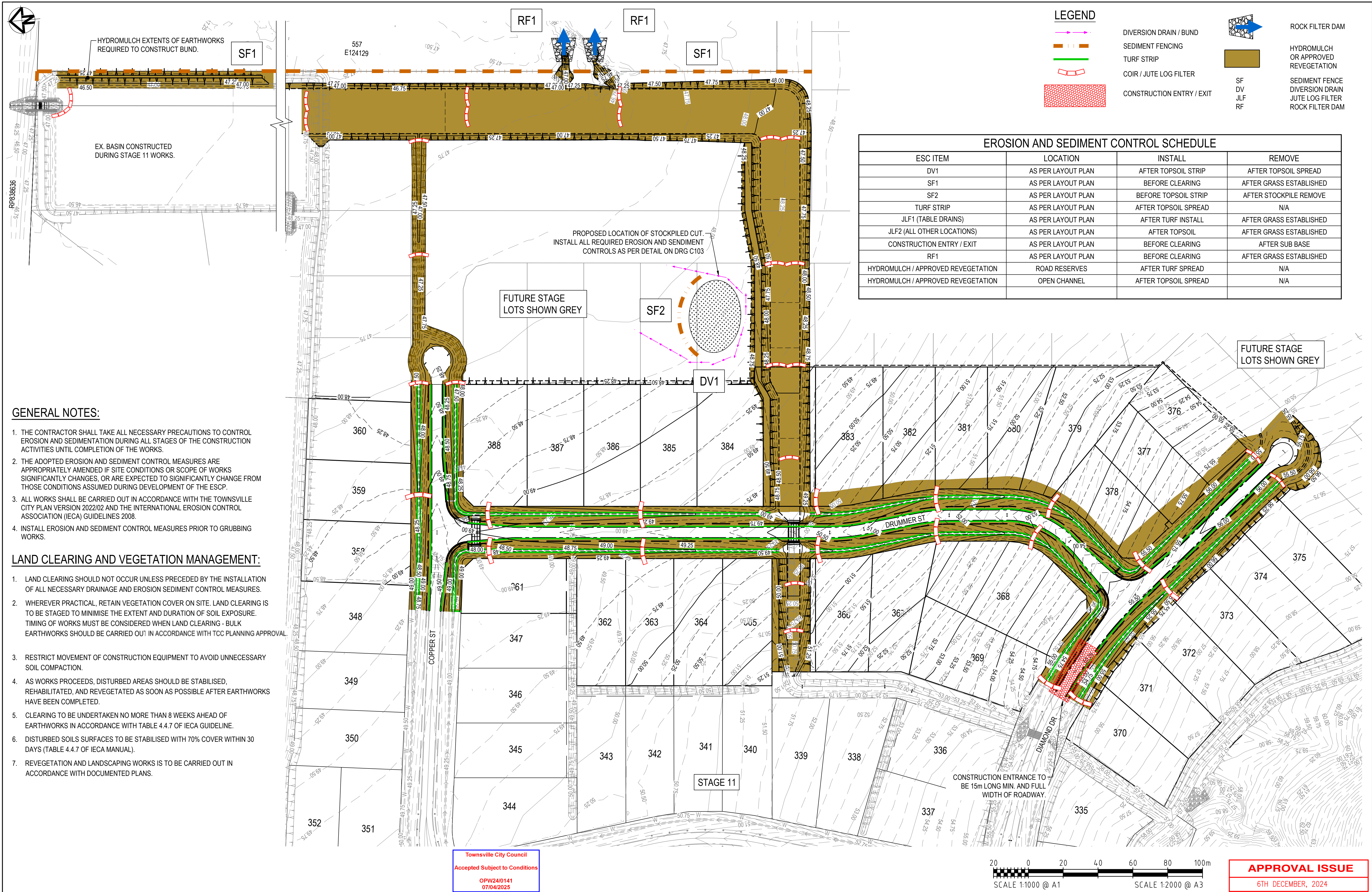


DRAINAGE CROSS SECTIONS OPEN CHANNEL '03' (CONT.)
SCALE 1:100

REVISIONS					HORIZ. DATUM		MT MARGARET GRID		<div>CERTIFICATION</div> <div></div> <div>BRETT LANGTREE RPEQ NO. 11932</div>		<div></div> <div>m e</div> <div>0400 699 979 brett@langtreeconsulting.com.au</div>	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS						SCALE	1:100			
					VERT. DATUM		AHD											SHEET	18 OF 28			
						DRG. FILE	0944	DATE	<div>COPYRIGHT ©</div> <div>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</div>			REVISION	A									
	A	B.L.	06.12.24	APPROVAL ISSUE	DESIGN	B.L.	NOV '24															
	No.	BY	DATE	DESCRIPTION	DRAWN	C.B.P.	NOV '24															

NICKEL STREET					
ALICE RIVER, QLD, 4817 ,					
OPEN CHANNEL SECTIONS SHEET 3					

DRG No.	0944 - C087			
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REVISIONS					HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION		<div><div>Langtree Consulting</div><div>m e 0400 699 979 brett@langtreeconsulting.com.au</div></div>	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS										SCALE	1:1000															
					VERT. DATUM		AHD		 BRETT LANGTREE RPEQ NO. 11932			<div>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</div>	NICKEL STREET ALICE RIVER, QLD, 4817										SHEET	19 OF 28														
	C	B.L.	12.03.25	APPROVAL ISSUE - MINOR UPDATES	DRG. FILE		0944		DATE														COPYRIGHT © The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.										REVISION	A	B	C		
	B	B.L.	06.12.24	APPROVAL ISSUE																														DESIGN		B.L.		NOV '24
	A	B.L.	18.11.24	PRELIMINARY ISSUE	DRAWN		C.B.P.		NOV '24														EROSION AND SEDIMENT CONTROL LAYOUT PLAN															
	No.	BY	DATE	DESCRIPTION																																		

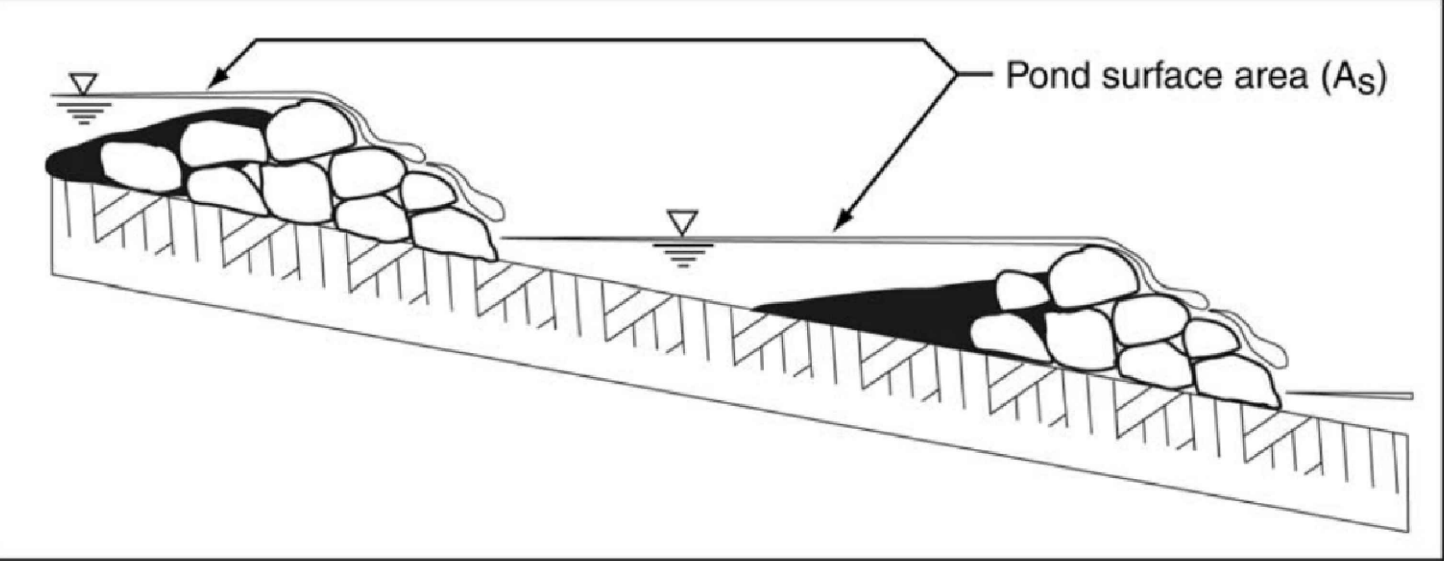
CHECK DAM SEDIMENT TRAPS

INSTALLATION

- REFER TO APPROVED PLANS FOR LOCATION AND INSTALLATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
- PRIOR TO PLACEMENT OF THE SEDIMENT TRAP, ENSURE THE DRAINAGE CHANNEL IS DEEP ENOUGH TO PREVENT WATER BEING UNSAFELY DIVERTED OUT OF THE DRAIN ONCE THE CHECK DAMS ARE INSTALLED.
- LOCATE EACH CHECK DAM SEDIMENT TRAP AS DIRECTED WITHIN THE APPROVED PLANS, OR OTHERWISE AT SUCH A SPACING TO ACHIEVE THE REQUIRED SEDIMENT TRAPPING OUTCOMES.
- IF THE CHECK DAMS ARE ALSO BEING USED TO CONTROL EROSION WITHIN THE DRAINAGE CHANNEL, THEN LOCATE EACH SUCCESSIVE CHECK DAM SUCH THAT THE CREST OF THE IMMEDIATE DOWNSTREAM DAM IS LEVEL WITH THE CHANNEL INVERT AT THE IMMEDIATE UPSTREAM CHECK DAM.
- CONSTRUCT EACH CHECK DAM TO THE DIMENSIONS AND PROFILE SHOWN WITHIN THE APPROVED PLAN.
- WHERE SPECIFIED, THE CHECK DAMS MUST BE CONSTRUCTED ON A SHEET OF GEOTEXTILE FABRIC USED AS A DOWNSTREAM SPLASH PAD.
- EACH CHECK DAM MUST BE EXTENDED UP THE CHANNEL BANK (WHERE PRACTICABLE) TO AN ELEVATION AT LEAST 150MM ABOVE THE CREST LEVEL OF THE DAM.
- ENSURE EACH SOCK EXTENDS UP THE CHANNEL BANKS (WHERE PRACTICAL) TO A LEVEL AT LEAST 100MM ABOVE THE CREST LEVEL OF THE CHECK DAM.

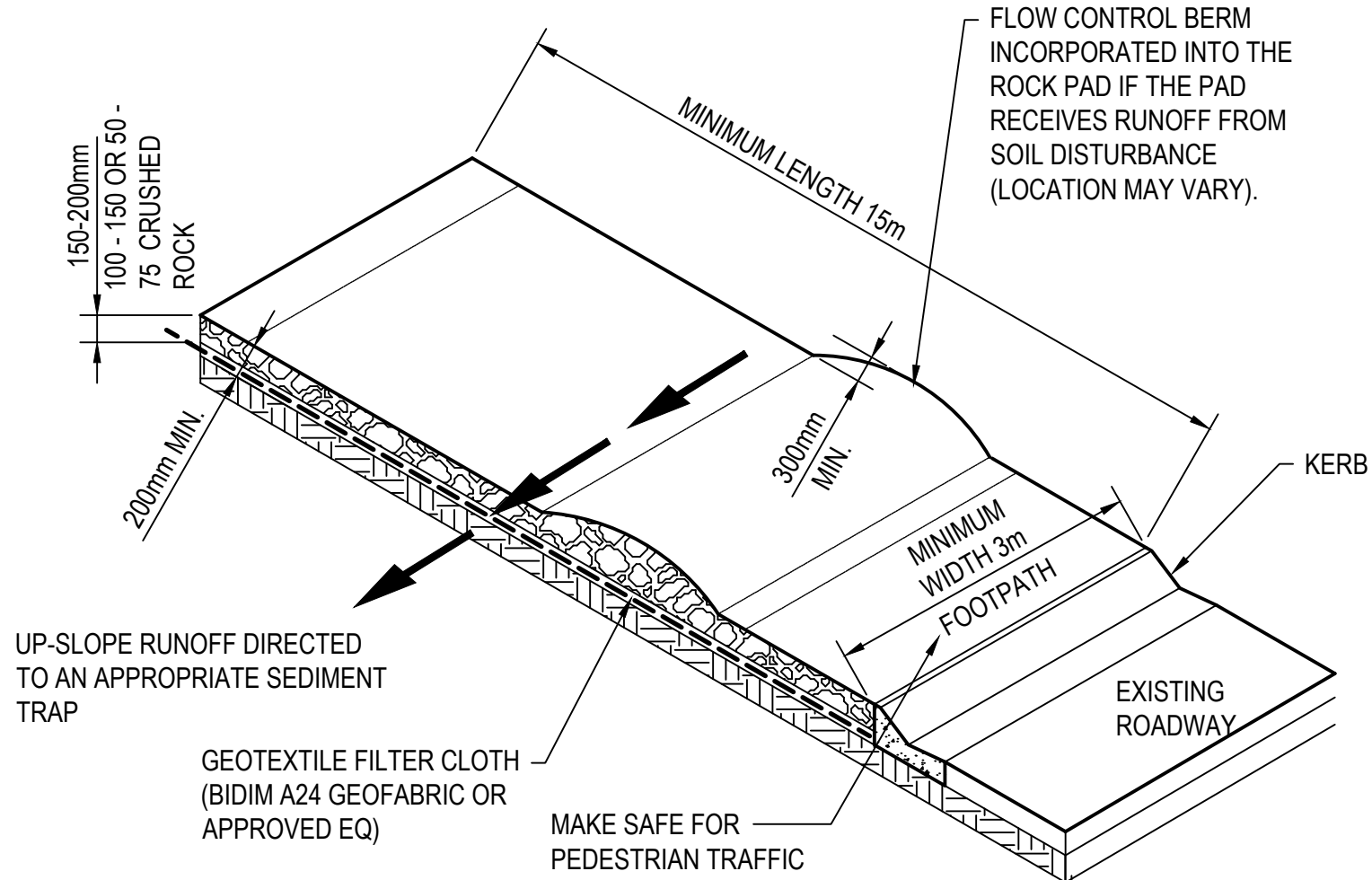
MAINTENANCE

- INSPECT EACH CHECK DAM AND THE DRAINAGE CHANNEL AT LEAST WEEKLY AND AFTER RUNOFF-PRODUCING RAINFALL.
- CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN ANY OF THE CHECK DAMS, THEN CHECK THE SPACING OF THE DAMS AND WHERE NECESSARY INSTALL INTERMEDIATE CHECK DAMS OR A SUITABLE CHANNEL LINER.
- CHECK FOR DISPLACEMENT OF THE CHECK DAMS.
- CHECK FOR SOIL SCOUR AROUND THE ENDS OF EACH CHECK DAM. IF SUCH EROSION IS OCCURRING, CONSIDER EXTENDING THE WIDTH OF THE CHECK DAM TO AVOID SUCH PROBLEMS.
- IF SEVERE SOIL EROSION OCCURS EITHER UNDER OR AROUND THE CHECK DAMS, THEN SEEK EXPERT ADVICE ON AN ALTERNATIVE TREATMENT MEASURE.
- DE-SILT SEDIMENT TRAP IF THE SEDIMENT LEVEL EXCEEDS 1/3 THE CREST HEIGHT. 7. DISPOSE OF COLLECTED SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.



CHECK DAM SEDIMENT TRAP

NOT TO SCALE



CONSTRUCTION ENTRY / EXIT DETAIL

NOT TO SCALE

STABILISED ENTRY / EXIT NOTES:

MATERIALS:

- ROCK: WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 50mm TO 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.
- FOOTPATH STABILISING AGGREGATE: 25 TO 50mm GRAVEL OR AGGREGATE.
- GEOTEXTILE FABRIC: HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

INSTALLATION:

- REFER TO APPROVED PLANS FOR LOCATION AND DIMENSIONAL DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
- CLEAR THE LOCATION OF THE VIBRATION GRID, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE
- IF THE EXPOSED SOIL IS SOFT, PLASTIC OR CLAYEY, PLACE A SUB-BASE OF CRUSHED ROCK OR A LAYER OF HEAVY-DUTY FILTER CLOTH TO PROVIDE A FIRM FOUNDATION.
- ENSURE THAT THE INSTALLATION OF THE VIBRATION GRID INCLUDES ADEQUATE SEDIMENT STORAGE VOLUME UNDER THE GRID. WHERE NECESSARY, INSTALL SUITABLE PRECAST SEDIMENT COLLECTION CHAMBERS.
- PLACE A ROCK PAD/RAMP FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK OVER THE ROADWAY BETWEEN THE VIBRATION GRID AND THE SEALED STREET TO PREVENT TYRES FROM PICKING UP MORE SOIL AFTER THEY HAVE BEEN CLEANED.
- THE TOTAL LENGTH OF THE VIBRATION GRIP AND ROCK RAMPS SHOULD BE AT LEAST 15m WHERE PRACTICABLE, AND AS WIDE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK RAMP SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.
- FLARE THE END OF THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.
- IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, THEN COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE

MAINTENANCE:

- INSPECT VIBRATION GRID PRIOR TO FORECAST RAIN, DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF-PRODUCING RAINFALL, OR OTHERWISE AT FORTNIGHTLY INTERVALS.
- IF SAND, SOIL, SEDIMENT OR MUD IS TRACKED OR WASHED ONTO THE ADJACENT SEALED ROADWAY, THEN SUCH MATERIAL MUST BE PHYSICALLY REMOVED, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.
- IF NECESSARY FOR SAFETY REASONS, THE ROADWAY SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIAL FROM THE ROADWAY.
- WHEN THE VOIDS BETWEEN THE ROCK BECOMES FILLED WITH MATERIAL AND THE EFFECTIVENESS OF THE ROCK RAMPS ARE REDUCED TO A POINT WHERE SEDIMENT IS BEING TRACKED OFF THE SITE, A NEW 100mm LAYER OF ROCK MUST BE ADDED AND/OR THE ROCK PAD MUST BE EXTENDED.
- ENSURE ANY ASSOCIATED DRAINAGE CONTROL MEASURES ARE MAINTAINED IN ACCORDANCE WITH THEIR DESIRED OPERATIONAL CONDITION.
- DISPOSE OF SEDIMENT AND DEBRIS IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

REMOVAL:

- INSPECT THE SEDIMENT FENCE AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY
- THE VIBRATION GRID SHOULD BE REMOVED ONLY AFTER IT IS NO LONGER NEEDED AS A SEDIMENT CONTROL DEVICE.
- REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.
- RE-GRADE AND STABILISE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.

Townsville City Council
Accepted Subject to Conditions
OPW24/0141
07/04/2025

SWALE INVERT

SINGLE LAYER OF SANDBAGS TO FORM A V SHAPE WEIR IN CHANNEL. PLACE IN SUCH A MANNER AS TO NOT DISPLACE STORMWATER RUNOFF OUTSIDE OF SWALE I.E. CENTRE OF WEIR MUST BE LOWER THAN SURROUNDING SURFACE.

TYPICAL SAND BAG CHECK DAM

NOT TO SCALE

SITE REHABILITATION

- ALL DISTURBED AREAS IDENTIFIED AS VERY LOW, LOW, MEDIUM, HIGH FOR EXTREME RISK MUST BE SUITABLE WITHIN 30,30,20,10, OR 5 DAYS RESPECTIVELY, OR PRIOR TO ANTICIPATED RAINFALL WHICHEVER IS THE GREATER, FROM THE DAY THAT SOIL DISTURBANCES ON THE AREA HAVE BEEN FINALISED.
- A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION WITHIN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 & 100mm; MINIMUM 75% COVER WITHIN 10 DATS IF BETWEEN 100 AND 225mm AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm.
- THE TYPE OF GROUND COVER APPLIED TO COMPLETED EARTHWORKS IS COMPATIBLE WITH THE ANTICIPATED LONG-TERM LAND USE, ENVIRONMENTAL RISK, AND SITE REHABILITATION MEASURES.
- TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO COMPLETION OF WORKS. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATES EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
- CREEK BANKS AND BEDS MUST BE RETURNED AS CLOSE IN SHAPE AND HYDRAULIC CAPACITY TO ORIGINAL. EROSION CONTROL ON BANKS IS TO BE DUMPED ROCK ON BIDIM.
- THE ROCK LAYER THICKNESS SHALL BE TWO TIMES D50 AT UPSTREAM AND DOWNSTREAM TERMINATIONS TO PREVENT UNDER CUTTING.
- ALL DAMAGE TO GRASSED AREAS CAUSED BY MACHINERY SHALL BE RECTIFIED BY COVERING THE DISTURBED AREAS WITH TOPSOIL AND THEN GRASS SEEDING THE AREA OR BY THE PLACEMENT OF TURF. A SILT FENCE SHALL BE CONSTRUCTED ON THE DOWNHILL SIDE OF THE DISTURBED AREA UNTIL GRASS COVER HAS BEEN ESTABLISHED.
- CULTIVATE TOP 150 MM OF SUBGRADE PRIOR TO PLACEMENT OF ROCK.
- DO NOT DUMP ROCK DIRECTLY FROM THE TRUCK AT THE TOP OF THE BATTER. USE AN EXCAVATOR TO PLACE THE ROCK AND ENSURE SEGREGATION OF THE ROCK IS MINIMISED. THE FINISHED ROCK MASS SHALL BE WELL INTEGRATED AND IRREGULAR WHILE ACHIEVING FISH PASSAGE REQUIREMENTS
- ALL EXCAVATED MATERIAL SHALL BE STOCKPILED CLEAR OF THE TOP OF BANK AND CLEAR OF ANY OVERLAND FLOW PATHS AND EXISTING TREES. A SILT FENCE SHALL BE CONSTRUCTED ON THE DOWNHILL SIDE OF THE STOCKPILE. ALL AREAS SHALL BE FILLED WITH SELECTED BACKFILL AND COMPACTED.
- DESIGNED BATTERS SHALL BE SMOOTHLY TRANSITIONED TO CONNECT TO EXISTING SLOPES. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN (EMP).
- STREAM BED ROCK PROTECTION:
 - MUST NOT BE STEEPER THAN A 1 IN 20 GRADIENT (DOWNSTREAM OF CULVERTS) OR THE NATURAL CHANNEL GRADIENT, WHICHEVER IS STEEPER.
 - MUST INCLUDE A LOW FLOW CHANNEL AS INDICATED ON THE DRAWINGS
 - MUST ENSURE THAT ROCK IS NOT OVER COMPACTED AND LEFT PROUD AND UNEVEN (TRUCK ROLLED FINISH OR ROUGHER).
 - MUST ABUT THE APRON AND STREAM BED AT THE SAME LEVEL TO ENSURE THAT THERE IS NO DROP IN ELEVATION AT THE JOIN
- ROCK SHALL BE SOUND DURABLE STONE, FREE FROM CRACKS AND SEAMS. THE MINIMUM SPECIFIC GRAVITY OF ROCK SHALL BE 2.6.
- THE D50 DIMENSION IS THE THEORETICAL DIAMETER OF A SPHERE WITH THE REQUIRED VOLUME AND MASS. TABLE A GIVES A GUIDE TO DIMENSIONS FOR ROCK SIZES WHICH ARE EQUIVALENT TO THE THEORETICAL SPHERICAL DIAMETERS SHOWN. DIMENSIONS FOR VARIOUS LENGTH/WIDTH RATIO ROCKS ARE GIVEN.
- ROCK SHALL BE PROPORTIONED SO THAT THE LENGTH IS NOT MORE THAN THREE TIMES EITHER THE WIDTH OR THICKNESS OF A SINGLE ROCK.
- 95% MAXIMUM DRY DENSITY (MODIFIED) TO AS1289. EXACT DIMENSIONS AND CONFIGURATION TO BE ESTABLISHED ON SITE.

SITE MANAGEMENT

- ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES MUST BE LOCATED SUCH THAT ANY LIQUID EFFLUENT (E.G. PROCESS WATER, WASH-DOWN WATER, EFFLUENT FROM EQUIPMENT CLEANING, OR PLANT WATERING), CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
- THE CONSTRUCTION SCHEDULE MUST AIM TO MINIMISE THE DURATION THAT ANY AND ALL AREAS OF SOIL ARE EXPOSED TO THE EROSION EFFECTS OF WIND, RAIN AND SURFACE WATER.
- LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN (ESCP) AND ASSOCIATED DEVELOPMENT CONDITIONS.
- LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN SUCH A MANNER THAT ALLOWS ALL REASONABLE AND PRACTICABLE MEASURES TO BE UNDERTAKEN TO:
 - ALLOW STORMWATER TO PASS THROUGH THE SITE IN A CONTROLLED MANNER AND AT NON-EROSIVE FLOW VELOCITIES UP TO THE SPECIFIED DESIGN STORM DISCHARGE;
 - MINIMISE SOIL EROSION RESULTING FROM RAIN, WATER FLOW AND/OR WIND;
 - MINIMISE ADVERSE EFFECTS OF SEDIMENT RUNOFF, INCLUDING SAFETY ISSUES;
 - PREVENT, OR AT LEAST MINIMISE, ENVIRONMENTAL HARM RESULTING FROM WORK-RELATED SOIL EROSION AND SEDIMENT RUNOFF;
 - ENSURE THAT THE VALUE AND USE OF LAND/PROPERTIES ADJACENT TO THE DEVELOPMENT (INCLUDING ROADS) ARE NOT DIMINISHED AS A RESULT OF THE ADOPTED ESC MEASURES.
- ANY WORKS THAT MAY CAUSE SIGNIFICANT SOIL DISTURBANCE AND ARE ANCILLARY TO ANY ACTIVITY FOR WHICH REGULATORY BODY APPROVAL IS REQUIRED, MUST NOT COMMENCE BEFORE THE ISSUE OF THAT APPROVAL.
- ADDITIONAL AND/OR ALTERNATIVE ESC MEASURES MUST BE IMPLEMENTED IN THE EVENT THAT SITE INSPECTIONS, THE SITE'S MONITORING AND MAINTENANCE PROGRAM, OR THE REGULATORY AUTHORITY, IDENTIFIES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF THE WORK ACTIVITIES.
- SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
- WHEREVER REASONABLE AND PRACTICABLE, BRICK, TILE AND MASONRY CUTTING MUST BE CARRIED OUT ON A PERVIOUS SURFACE, SUCH AS GRASS, OR OPEN SOIL, OR IN SUCH A MANNER THAT ALL SEDIMENT-LADEN RUNOFF IS PREVENTED FROM DISCHARGING INTO A GUTTER, DRAIN, OR WATER BODY.
- ADEQUATE WASTE COLLECTION BINS MUST BE PROVIDED ON-SITE AND MAINTAINED SUCH THAT POTENTIAL AND ACTUAL ENVIRONMENTAL HARM RESULTING FROM SUCH MATERIAL WASTE IS MINIMISED.
- CONCRETE WASTE AND CHEMICAL PRODUCTS, INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
- ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
- TRENCHES NOT LOCATED WITHIN ROADWAYS MUST BE BACKFILLED, CAPPED WITH TOPSOIL, AND COMPACTED TO A LEVEL AT LEAST 75MM ABOVE ADJOINING GROUND LEVEL AND APPROPRIATELY STABILISED.
- ALL STORMWATER, SEWER LINE AND OTHER SERVICE TRENCHES, NOT LOCATED WITHIN ROADWAYS, MUST BE MULCHED AND SEEDED, OTHER OTHERWISE APPROPRIATELY STABILISED WITHIN 7 DAYS AFTER BACKFILL.
- NO MORE THAN 150M OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST TO BE OPEN AT ANY ONE TIME.
- SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
- ALL FILL MATERIAL PLACED ON SITE MUST COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS, BE FREE DRAINING, AND BE COMPACTED IN LAYERS NOT EXCEEDING 300MM TO 90% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS1289.

DRAINAGE CONTROL

- WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LADEN (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
- DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAN PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
- TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
- WHEREVER REASONABLE AND PRACTICABLE, "CLEAN" SURFACE WATERS MUST BE DIVERTED AWAY FROM SEDIMENT CONTROL DEVICES AND ANY UNTREATED, SEDIMENT-LADEN WATERS.

APPROVAL ISSUE

6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION		<div><div><div>m</div><div>e</div></div><div>0400 699 979</div><div>brett@langtreeconsulting.com.au</div></div>	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS										SCALE	-							
					VERT. DATUM		AHD			 <div>BRETT LANGTREE RPEQ NO. 11932</div>		NICKEL STREET										SHEET	20 OF 28							
	B	B.L.	06.12.24	APPROVAL ISSUE		DRG. FILE	0944		DATE			COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 388 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small>		ALICE RIVER, QLD, 4817										REVISION	A	B				
	A	B.L.	18.11.24	PRELIMINARY ISSUE		DESIGN		B.L.		NOV '24																				
	No.	BY	DATE	DESCRIPTION		DRAWN		C.B.P.		NOV '24												DRG No.	0944 - C102							

SEDIMENT FENCE

MATERIALS

- 1. FABRIC: POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700MM IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140GSM.
- 2. SUPPORT POSTS/STAKES AND STEEL STAR PICKETS SUITABLE FOR ATTACHING FABRIC.

INSTALLATION

- 1. WHERE POSSIBLE INSTALL SEDIMENT FENCE AT LEAST 2M FROM THE TOE OF ANY FILLING OPERATIONS THAT MAY RESULT IN SHIFTING SOIL/FILL DAMAGING THE FENCE.
- 2. ENSURE THE EXTREME ENDS OF THE FENCE ARE TURNED UP THE SLOPE AT LEAST 1.5M OR AS NECESSARY TO MINIMISE WATER BYPASSING AROUND THE FENCE.
- 3. ENSURE THE SEDIMENT FENCE IS INSTALLED IN A MANNER THAT AVOIDS THE CONCENTRATION OF FLOW ALONG THE FENCE AND THE UNDESIRABLE DISCHARGE OF WATER AROUND THE ENDS OF THE FENCE.
- 4. IF THE SEDIMENT FENCE IS TO BE INSTALLED ALONG THE EDGE OF THE EXISTING TREES, ENSURE CARE IS TAKEN TO PROTECT THE TREES AND THEIR ROOT SYSTEMS DURING INSTALLATION OF THE FENCE.
- 5. UNLESS DIRECTED BY THE SITE SUPERVISOR OR THE APPROVED PLANS, EXCAVATE A 200MM WIDE BY 200MM DEEP TRENCH ALONG THE PROPOSED FENCE LINE, PLACING THE EXCAVATED MATERIAL ON THE UP-SLOPE SIDE OF THE TRENCH.
- 6. ALONG THE LOWER SIDE OF THE TRENCH, APPROPRIATELY SECURE THE STAKES INTO THE GROUND SPACED NO GREATER THAN 3M IF SUPPORTED BY A TOP SUPPORT WIRE OR WEIR MESH BACKING, OTHERWISE NO GREATER THAN 2M.
- 7. WHEREVER POSSIBLE, CONSTRUCT THE SEDIMENT FENCE FROM A CONTINUOUS ROLL OF FABRIC. TO JOIN FABRIC ATTACH EACH END OF TWO OVERLAPPING STAKES WITH THE FABRIC FOLDING AROUND THE ASSOCIATED STAKE ONE TURN AND WITH TWO STAKES TIED TOGETHER WITH THE WIRE METHOD OR OVERLAP THE FABRIC TO THE NEXT ADJACENT SUPPORT POST.
- 8. SECURELY ATTACH THE FABRIC TO THE SUPPORT POSTS USING 25 X 12.5MM STAPLES, OR TIE WIRE AT MAXIMUM 150MM SPACING.
- 9. SECURELY ATTACH THE FABRIC TO THE SUPPORT WIRE/MESH (IF ANY) AT A MAXIMUM SPACING OF 1M.
- 10. ENSURE THE COMPLETED SEDIMENT FENCE IS AT LEAST 450MM, BUT NOT MORE THAN 700MM HIGH. IF A SPILL THROUGH WEIR IS INSTALLED, ENSURE THE CREST OF THE WEIR IS AT LEAST 300MM ABOVE GROUND LEVEL.
- 11. BACKFILL THE TRENCH AND TAMP THE FILL TO FIRMLY ANCHOR THE BOTTOM OF THE FABRIC AND MESH TO PREVENT WATER FROM FLOWING UNDER THE FENCE.
- 12. IF IT IS NOT POSSIBLE TO ANCHOR THE FABRIC IN AN EXCAVATED TRENCH, THEN USE A CONTINUOUS LAYER OF SAND OR AGGREGATE TO HOLD THE FABRIC FIRMLY ON THE GROUND.

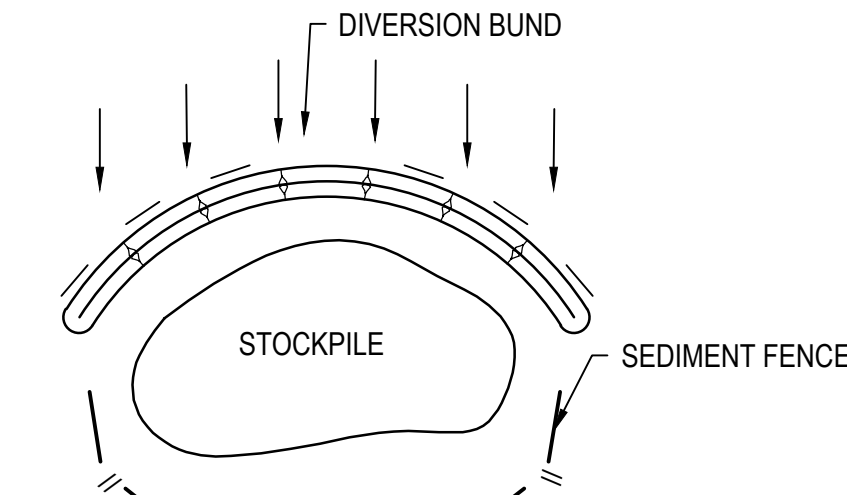
MAINTENANCE

- 1. INSPECT THE SEDIMENT FENCE AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY.
- 2. REPAIR ANY TORN SECTIONS WITH A CONTINUOUS PIECE OF FABRIC FROM POST TO POST.
- 3. WHEN MAKING REPAIRS, ALWAYS RESTORE THE SYSTEM TO ITS ORIGINAL CONFIGURATION UNLESS AN AMENDED LAYOUT IS REQUIRED OR SPECIFIED.
- 4. IF THE FENCE IS SAGGING BETWEEN STAKES, INSTALL ADDITIONAL SUPPORT POSTS.
- 5. REMOVE ACCUMULATED SEDIMENT IF THE SEDIMENT DEPOSIT EXCEEDS A DEPTH OF 1/3 THE HEIGHT OF THE FENCE.
- 6. DISPOSE OF SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD

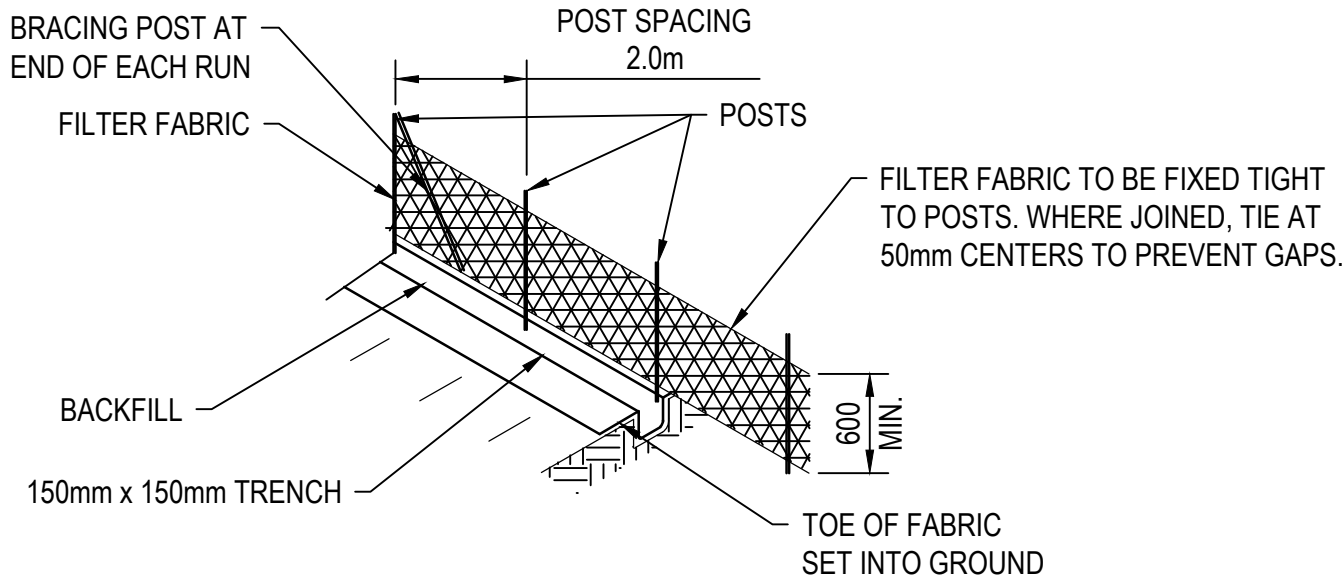
MATERIAL STOCKPILING:

THE CONSTRUCTION CONTRACTOR IS TO ADHERE TO THE FOLLOWING SOIL AND STOCKPILE MANAGEMENT PRACTISES. IN ADDITION, AS THE SITE IS WITHIN THE FIRE ANT BIOSECURITY ZONE 1, RECOMMENDATIONS FOR ADEQUATE STOCKPILING IN ACCORDANCE WITH THE BIOSECURITY ACT 2014 ARE ALSO PROVIDED BELOW. STOCKPILES OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED MUST BE:

- 1. APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS;
- 2. LOCATED AT LEAST 2m FROM ANY HAZARDOUS AREA, RETAINED VEGETATION, OR CONCENTRATED DRAINAGE LINE;
- 3. LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM;
- 4. PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 28 DAYS.
- 5. PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK;
- 6. PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK;
- 7. A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500m2.

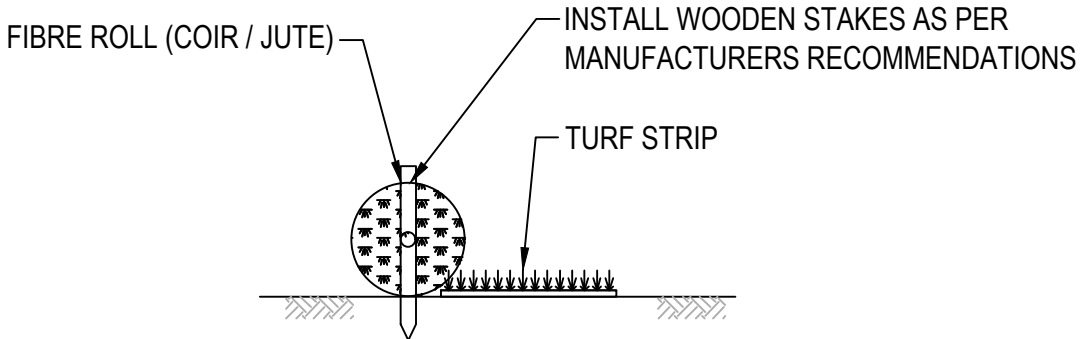


STOCKPILE SEDIMENT CONTROL
NOT TO SCALE

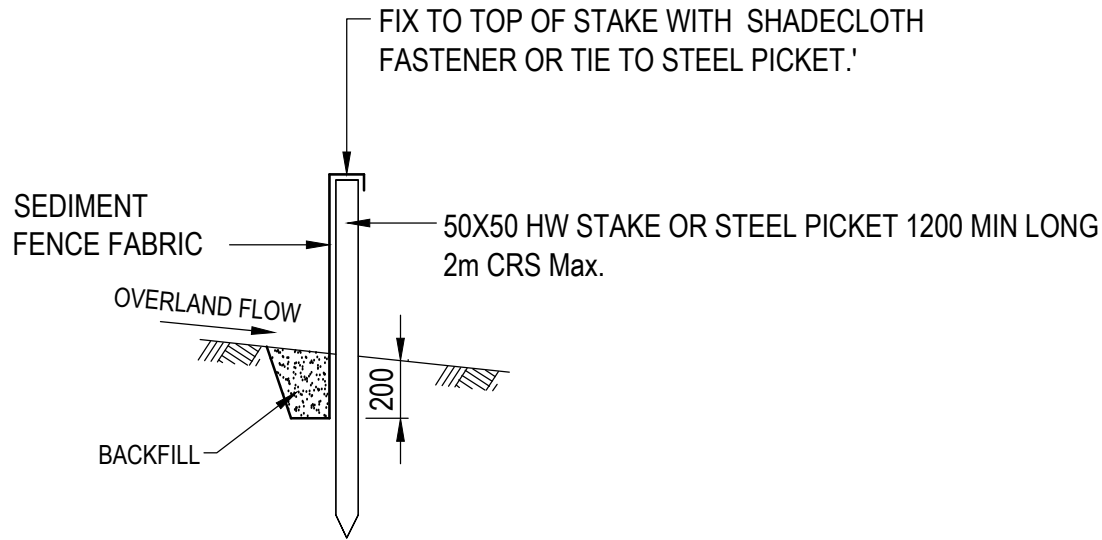


SEDIMENT FENCE ISOMETRIC
NOT TO SCALE

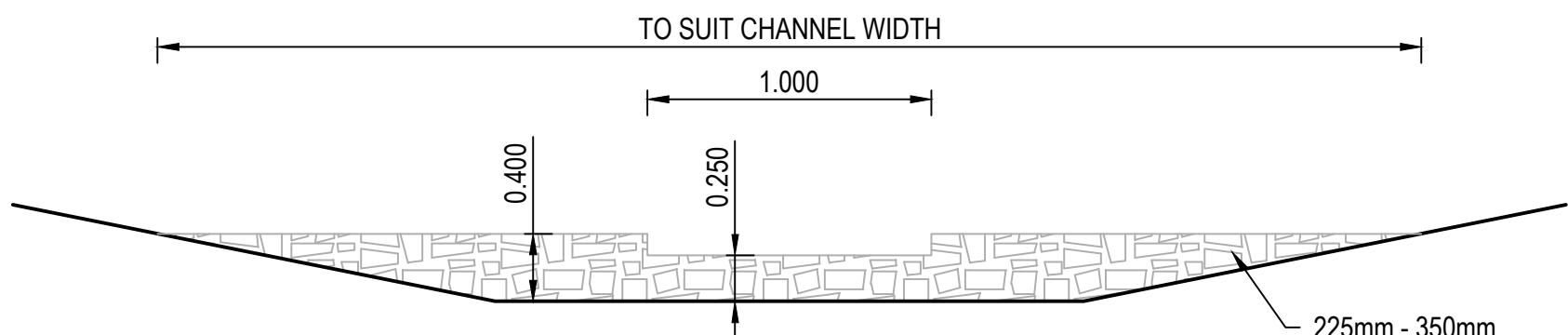
TYPICAL INSTALLATION OF A SEDIMENT FENCE
NOT TO SCALE



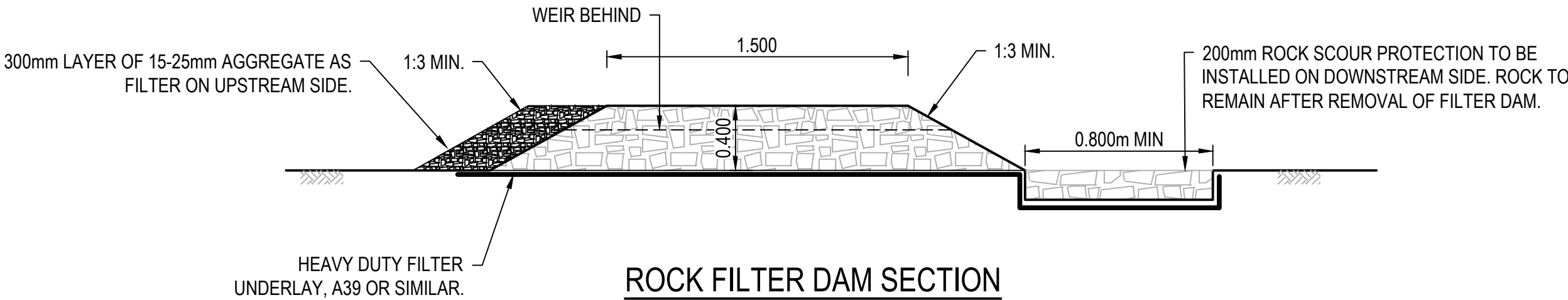
COIR / JUTE LOG TREATMENT
NOT TO SCALE



SEDIMENT FENCE SECTION



ROCK FILTER DAM
NOT TO SCALE



ROCK FILTER DAM SECTION
NOT TO SCALE

APPROVAL ISSUE

6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM		MT MARGARET GRID		CERTIFICATION		<div> Langtree Consulting</div> <div>m 0400 699 979 e brett@langtreeconsulting.com.au</div>	MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS					SCALE	AS SHOWN				
	C	B.L.	12.03.25	APPROVAL ISSUE - MINOR TEXT UPDATES		VERT. DATUM		AHD		Brett Langtree BRETT LANGTREE RPEQ NO. 11932							SHEET	21 OF 28				
	B	B.L.	06.12.24	APPROVAL ISSUE		DRG. FILE	0944	DATE	COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 368 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small>			NICKEL STREET ALICE RIVER, QLD, 4817					REVISION	A	B	C		
	A	B.L.	18.11.24	PRELIMINARY ISSUE		DESIGN	B.L.	NOV '24														
	No.	BY	DATE	DESCRIPTION		DRAWN	C.B.P.	NOV '24				EROSION AND SEDIMENT CONTROL NOTES AND DETAILS SHEET 2					DRG No.	0944 - C103				

GENERAL NOTES:

GENERAL:

1. ALL WORKS AND MATERIALS MUST BE IN ACCORDANCE WITH CURRENT TCC SPECIFICATIONS, STANDARD DRAWINGS, LOCAL AUTHORITY POLICIES AND AUSTRALIAN STANDARDS, UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR MUST TAKE ALL NECESSARY MEASURES TO PROTECT NEARBY PROPERTY OWNERS FROM DUST POLLUTION DURING ALL PHASES OF WORKS. FINISHED AREAS OF EARTHWORKS MUST BE KEPT WATERED WHERE NECESSARY UNTIL A SATISFACTORY GRASS COVER IS ACHIEVED.
3. ALL CONSTRUCTION WORKS ARE TO BE JOINED NEATLY TO EXISTING SURFACE.
4. PUBLIC UTILITIES - DESPITE THE POSITION OF PUBLIC UTILITIES, FITTINGS, PIPES, POLES, MANHOLES, ETC MAY BE INDICATED ON THE DRAWINGS, NO RESPONSIBILITY WILL BE ACCEPTED BY THE PRINCIPAL FOR THE ACCURACY OF THE REPRESENTATION OR THE OMISSION THEREOF.
5. LOCATION AND LEVEL OF EXISTING SERVICES AND STRUCTURES HAS BEEN PLOTTED FROM AVAILABLE RECORDS AND IS TO BE CONSIDERED INDICATIVE ONLY. THE CONTRACTOR MUST ACCURATELY LOCATE THESE ON SITE PRIOR TO COMMENCING WORKS AND MUST PROTECT ALL EXISTING SERVICES DURING CONSTRUCTION. ANY DAMAGE TO EXISTING SERVICES MUST BE REPAIRED AT THE CONTRACTORS EXPENSE.
6. VEGETATION OUTSIDE WORK AREAS MUST NOT BE DISTURBED UNLESS SPECIFICALLY AUTHORISED BY THE SUPERINTENDENT.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH ALL RELEVANT LEGISLATION.
8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN THE STABILITY OF ANY TEMPORARY WORKS ON THE SITE.
9. THE CONTRACTOR MUST CONFIRM THE ACCURACY OF ALL SETOUT AND CONFIRM ALL LEVELS WITH THE SUPERINTENDENT PRIOR TO COMMENCING CONSTRUCTION.
10. THE SURVEY LEVEL DATUM IS AHD AND THE CO-ORDINATE DATUM IS LOCAL AS PROVIDED BY ROWLANDS SURVEYS.
11. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH TMR SPECIFICATIONS AND THE PROJECT SPECIFICATIONS. IN THE EVENT OF A DISCREPANCY, REFER TO THE SUPERINTENDENT FOR CLARIFICATION.
12. THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH DRAWINGS PREPARED BY OTHER RELATED CONSULTANTS, ALL PROJECT SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE WORK. ALL THE DISCREPANCIES MUST BE REFERRED TO THE SUPERINTENDENT FOR DECISION BEFORE PROCEEDING WITH THE WORK.
13. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK MUST BE AS INDICATED ON THESE DRAWINGS AND MUST BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND/OR FABRICATION IS COMMENCED. THE ENGINEERS DRAWINGS MUST NOT BE SCALED, UNLESS SPECIFICALLY NOTED OTHERWISE.
14. DURING CONSTRUCTION THE CONTRACTOR MUST BE RESPONSIBLE FOR MAINTAINING PROPOSED AND EXISTING WORKS IN A STABLE CONDITION AND ENSURING NO PART MUST BE OVER STRESSED UNDER CONSTRUCTION ACTIVITIES.
15. SAFETY REQUIREMENTS MUST BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WORK PLACE, HEALTH AND SAFETY ACT.
16. THE APPROVAL FOR A SUBSTITUTION MAY BE SOUGHT FROM THE SUPERINTENDENT BUT IS NOT AN AUTHORISATION FOR A VARIATION. ANY VARIATION MUST BE APPROVED BY THE SUPERINTENDENT BEFORE WORK COMMENCES.
17. THE ACCESS FOR THE WORK SITE MUST BE AS INDICATED ON THE CONTRACT OR AS APPROVED BY THE SUPERINTENDENT AND THE LOCAL AUTHORITIES. THE CONTRACTOR MUST OBTAIN ALL NECESSARY AND RELEVANT PERMITS. IT IS THE CONTRACTORS RESPONSIBILITY TO CONSTRUCT AND MAINTAIN ACCESS AS REQUIRED TO ALL PARTS OF CONTRACTORS WORK AREA.
18. THE CONTRACTORS COMPOUND MUST BE LOCATED AS APPROVED BY SUPERINTENDENT.
19. ANY WORKS WITHIN A STATE CONTROLLED ROAD RESERVE MUST BE CARRIED OUT IN ACCORDANCE WITH DTMR CURRENT SPECIFICATIONS AND STANDARD DRAWINGS.
20. CONTRACTOR MUST UNDERTAKE ALL WORKS IN PROXIMITY TO EXISTING SERVICES AND INFRASTRUCTURE IN ACCORDANCE WITH THE RELEVANT UTILITY / AUTHORITY POLICIES AND PROCEDURES.

EROSION & SEDIMENT CONTROL:

1. FOR STANDARD SEDIMENT CONTROL DEVICE DETAILS REFER TO DRAWINGS PROVIDED FOR THIS PROJECT.
2. REFER TO THE EROSION AND SEDIMENT CONTROL PLAN AND IMPLEMENT EROSION CONTROL MEASURES PRIOR TO COMMENCING WORKS ON SITE. MAINTAIN EROSION CONTROL MECHANISMS IN WORKING ORDER DURING ENTIRE CONSTRUCTION.
3. SEDIMENT LOSS FROM THE WORK SITE MUST BE MANAGED IN ACCORDANCE WITH CURRENT RELEVANT ENVIRONMENTAL GUIDELINES LEGISLATION. THIS WILL NECESSITATE THE USE OF APPROPRIATE EROSION AND SEDIMENT CONTROLS. THESE MUST BE IMPLEMENTED AT THE SITE ESTABLISHMENT PHASE AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. PRE-DISTURBANCE SOIL PROFILES AND COMPACTION LEVELS MUST BE REINSTATED.
5. ALL VEHICLES EXITING FROM THE SITE ARE TO BE WASHED DOWN, CLEANED AND TREATED SO AS TO PREVENT MATERIAL BEING TRACKED OR DEPOSITED ON PUBLIC ROADS. INSTALL MEASURES FOR CONTROL OF WASH DOWN.
6. ALL DISTURBED AREAS MUST BE LEFT IN A STABLE CONDITION. REFER TO ROADWORKS AND DRAINAGE LAYOUTS AND TYPICAL SECTIONS AND DETAILS FOR BATTER TREATMENTS.
7. ALL VEGETATION WITHIN 4m OF GENERAL MACHINE OPERATION MUST BE PROTECTED WITH A STAR PICKET AND ROPE FENCE CONSTRUCTED AT LEAST 1m CLEAR OF THE VEGETATION;
8. EROSION AND SEDIMENT CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR WHO MUST COMPLY WITH TMR REQUIREMENTS.
9. IMPLEMENT WORKS SHOWN ON THE SEDIMENT AND EROSION PLAN.
10. PROGRESSIVELY CLEAN UP ALL LITTER AND OIL LEAKS, AND PREVENT WASH OFF OF CEMENT SLURRY AND AC PRIME.
11. SUITABLE DUST CONTROL MEASURES TO BE IMPLEMENTED AT ALL TIMES.
12. THE CONTRACTOR MUST ADVISE THE SUPERINTENDENT ONCE THE EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED.
13. EROSION AND SEDIMENT CONTROL MEASURES MUST REMAIN IN PLACE UNTIL REHABILITATION MEASURES HAVE ESTABLISHED.

EARTHWORKS:

1. ALL EARTHWORKS OPERATION SHALL BE CARRIED OUT IN ACCORDANCE WITH TOWNSVILLE CITY PLAN SCHEDULE 6.4.6.10 EARTHWORKS (CONSTRUCTION) AND SCHEDULE 6.4.6.11 CLEARING AND GRUBBING UNLESS NOTED OTHERWISE.
2. PRIOR TO COMMENCEMENT OF CLEARING OPERATIONS THE LIMITS OF CLEARING ARE TO BE CLEARLY ESTABLISHED AND MARKED. CLEARING OUTSIDE WORK AREAS MUST BE APPROVED BY THE SUPERINTENDENT. ALL TREES IDENTIFIED AS "TO BE RETAINED" ON THE PROJECT DRAWINGS (IF ANY) SHALL BE PROTECTED FROM DAMAGE AND CLEARLY MARKED WITH AN EASILY VISIBLE NON-INJURIOUS AND REMOVABLE MEANS OF IDENTIFICATION.
3. PRIOR TO THE COMMENCEMENT OF EARTHWORKS, ALL AREAS SUBJECT TO EARTHWORKS OPERATIONS SHALL BE CLEARED AND GRUBBED.
4. ALL CONCRETE SLABS, DRAINS AND OTHER STRUCTURES, SERVICES OR DEBRIS ARE TO BE REMOVED FROM SITE AS NECESSARY TO PROPERLY CONSTRUCT THE WORKS. EXCAVATIONS AS A RESULT OF DEBRIS REMOVAL SHALL BE BACKFILLED AND COMPACTED TO THE STANDARD APPROPRIATE FOR THE RELEVANT LOCATION OF THE WORKS.
5. ANY AREA AFFECTED BY EARTHWORKS SHALL BE STRIPPED OF ALL TOPSOIL AND ANY OTHER ORGANIC MATTER IN STOCKPILE FOR RE-SPREADING AS REQUIRED.
6. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT OF THE AVERAGE DEPTHS OF TOPSOIL MATERIAL AND ANY SIGNIFICANT VARIATIONS IN THE DEPTH OF TOPSOIL MATERIAL ENCOUNTERED DURING STRIPPING OPERATIONS.
7. TOPSOIL STOCKPILES ARE TO BE PROTECTED FROM SEDIMENT RUNOFF BY A CATCH DRAIN CONSTRUCTED ALONG UPHILL SIDES AND A SUITABLE SILT FENCE/SEDIMENT TRAP CONSTRUCTED ON THE DOWNHILL SIDES.
8. ALL EARTHWORKS SHALL BE COMPACTED TO MINIMUM 98% STANDARD COMPACTION.
9. UNSUITABLE MATERIAL WILL BE AS DESCRIBED IN AS3798. THE CONTRACTOR SHALL GAIN THE AGREEMENT OF THE SUPERINTENDENT PRIOR TO CLASSIFYING ANY MATERIAL AS BEING UNSUITABLE.

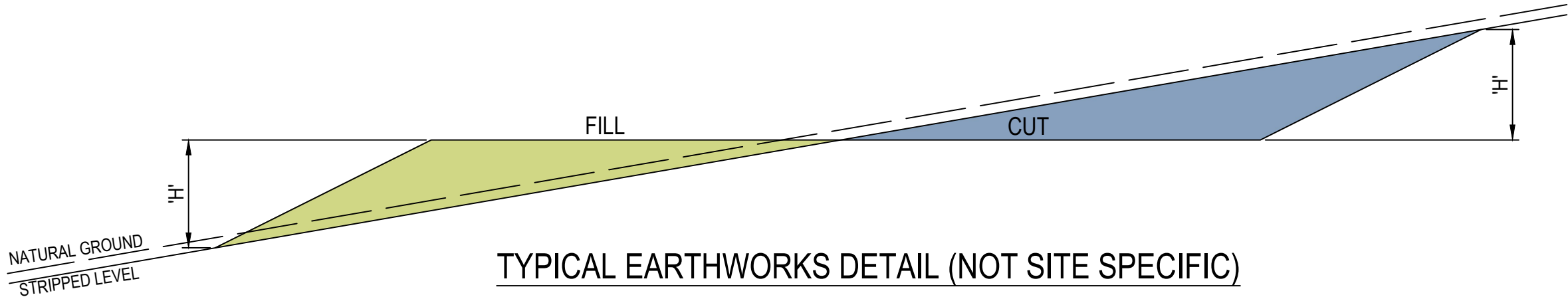
EROSION AND SEDIMENT CONTROL (ESC) MEASURES TO BE INSTALLED PRIOR TO COMMENCEMENT OF WORK.

EROSION PLANS AND BUILDING REPRESENTATIVE FAMILIAR WITH THE PLAN MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION

THIS DEVELOPMENT MAY REQUIRE THE IMPLEMENTATION OF SOIL RETENTION METHODS DURING CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THESE WORKS ARE CERTIFIED BY A SUITABLY QUALIFIED RPEQ AND INSTALLED PRIOR TO UNDERTAKEN THE FILLING AND EXCAVATION WORKS AS INDICATED ON THIS PLAN

ALL ENVIRONMENTAL MEASURES INCLUDING VEGETATION PROTECTION AND EROSION AND SEDIMENT CONTROL SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY WORK

Townsville City Council
Accepted Subject to Conditions
OPW24/0141
07/04/2025

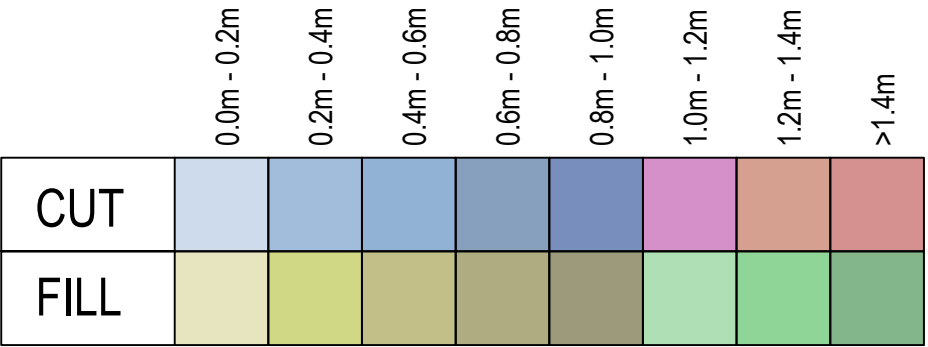


BATTER ANGLES - SHORT TERM

SLOPE = H : L H ≤ 2.0M 	MATERIAL TYPE (REFER GEOTECHNICAL REPORT)					
	STABLE ROCK	SAND	SILT	FIRM CLAY	SOFT CLAY	SOFT SOILS
COMPACTED FILL	1 : 1	1 : 3	1 : 4	1 : 2	N/A	N/A
CUTTING	N/A	1 : 3	1 : 4	1 : 2	1 : 3	N/A

* N/A - REFER TO GEOTECHNICAL REPORT FOR TREATMENT OF UNSUITABLE MATERIAL.
Note: ALL BATTER ANGLES APPROXIMATELY ONLY AND ARE TO BE CONFIRMED BY GEOTECHNICAL ENGINEER

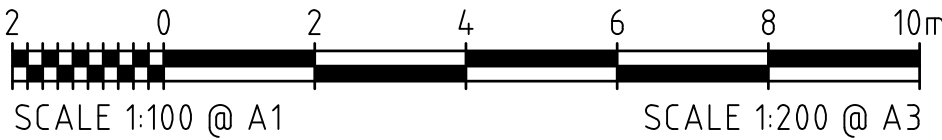
LEVEL 1 COMPACTION
ALL FILLING ON SITE TO BE LEVEL 1 COMPACTED FILL AS PER AS1289 UNLESS NOTED OTHERWISE.



EARTHWORKS TABLE

SITE PREPARATION	CUT (m³)	FILL (m³)	NETT (m³)
BULK EARTHWORKS FROM EXISTING SURFACE	-16694.482	16338.535	-355.947

EARTHWORKS VOLUMES ARE TAKEN FROM EXISTING SURFACE LEVEL TO FINISHED SURFACE LEVEL INCLUDING 400mm ROAD BOX.
CONTRACTOR IS TO CONFIRM VOLUMES PRIOR TO TENDER OR COMMENCEMENT OF WORKS ON SITE.
DETAILED EXCAVATION OF TRENCHES / SERVICES / STORMWATER EXCLUDED.



APPROVAL ISSUE

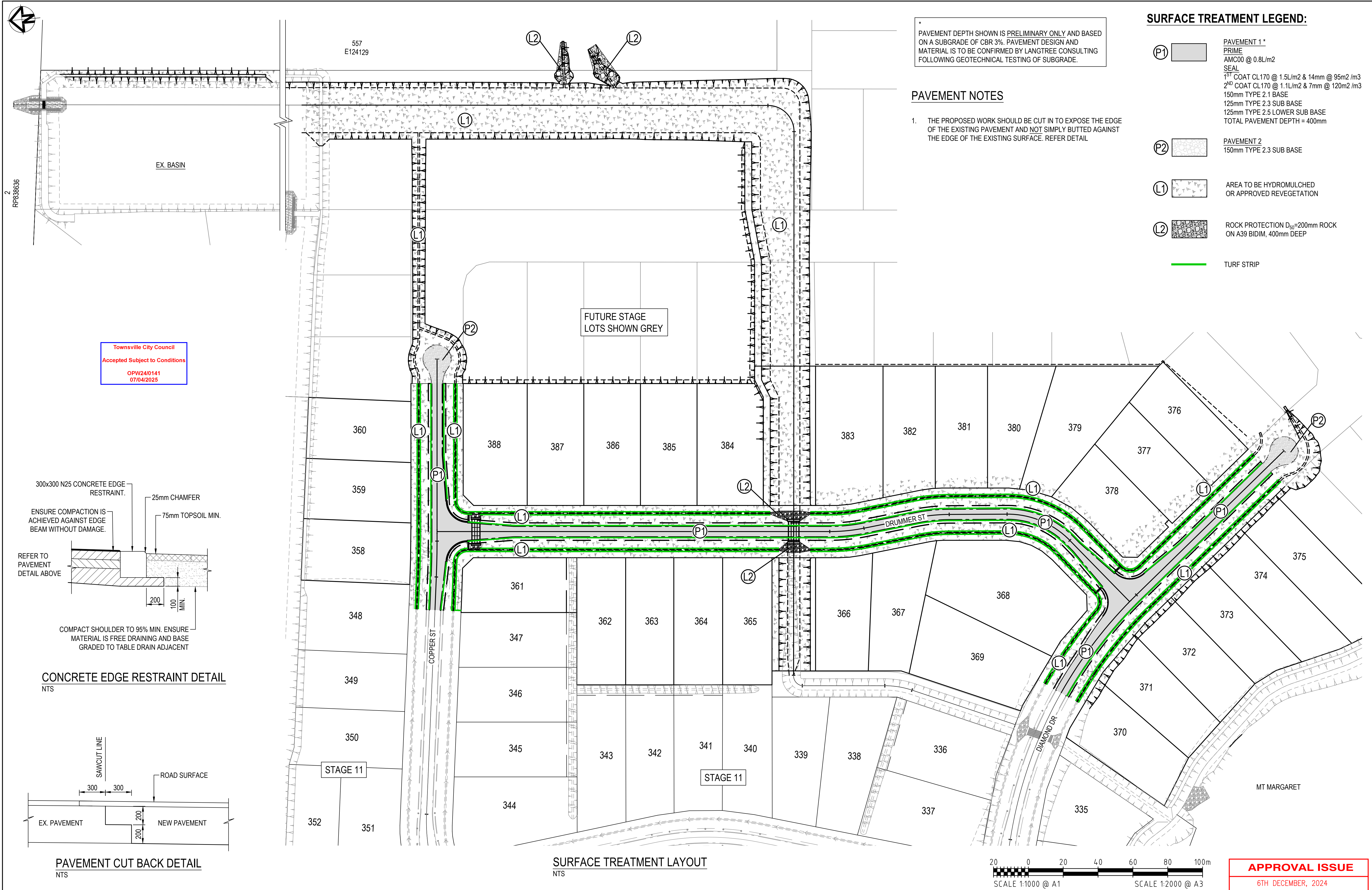
6TH DECEMBER, 2024

REVISIONS					HORIZ. DATUM	MT MARGARET GRID		CERTIFICATION
					VERT. DATUM	AHD		 BRETT LANGTREE RPEQ NO. 11932
					DRG. FILE	0944	DATE	COPYRIGHT © These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 368 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.
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	A	B.L.	18.11.24	PRELIMINARY ISSUE	DRAWN	C.B.P.	NOV '24	
	No.	BY	DATE	DESCRIPTION				

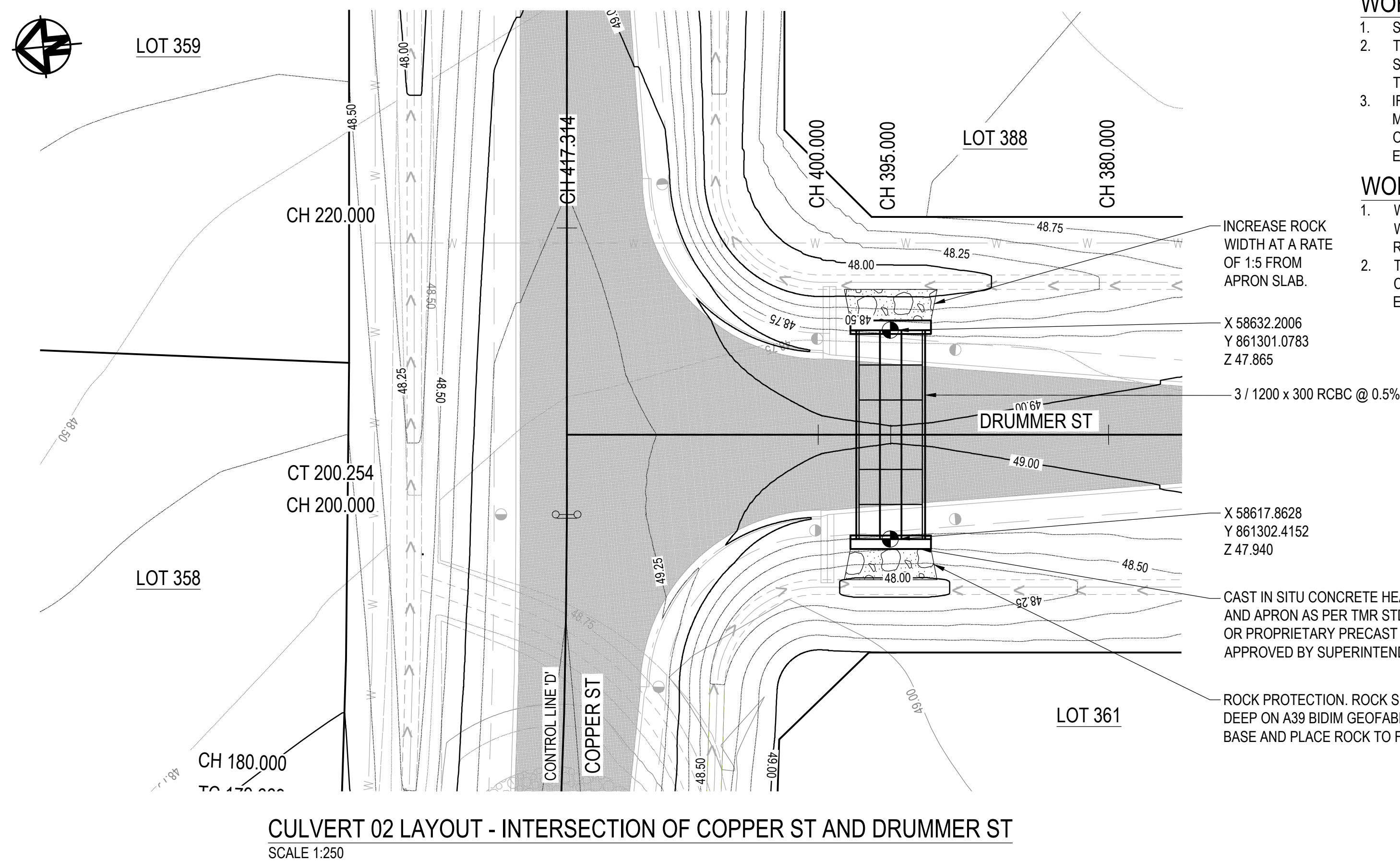
MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS				SCALE	N/A				
NICKEL STREET ALICE RIVER, QLD, 4817 BULK EARTHWORKS NOTES, DETAIL AND LEGEND				SHEET	22 OF 28				
				REVISION	A	B			
				DRG No.	0944 - C201				



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					VERT. DATUM	AHD		 BRETT LANGTREE RPEQ NO. 11932			<div> m 0400 699 979 e brett@langtreeconsulting.com.au</div>	NICKEL STREET ALICE RIVER, QLD, 4817 BULK EARTHWORKS LAYOUT PLAN										SHEET	23 OF 28						
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	B	B.L.	06.12.24	APPROVAL ISSUE	DRG. FILE	0944	DATE	REVISION				A	B											
	A	B.L.	18.11.24	PRELIMINARY ISSUE	DESIGN	B.L.	NOV '24																	
	No.	BY	DATE	DESCRIPTION	DRAWN	C.B.P.	NOV '24	DRG No.				0944 - C301												

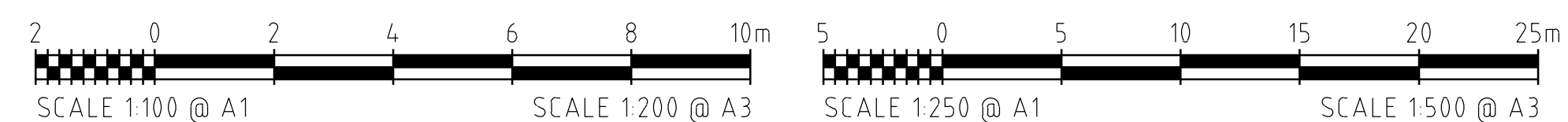
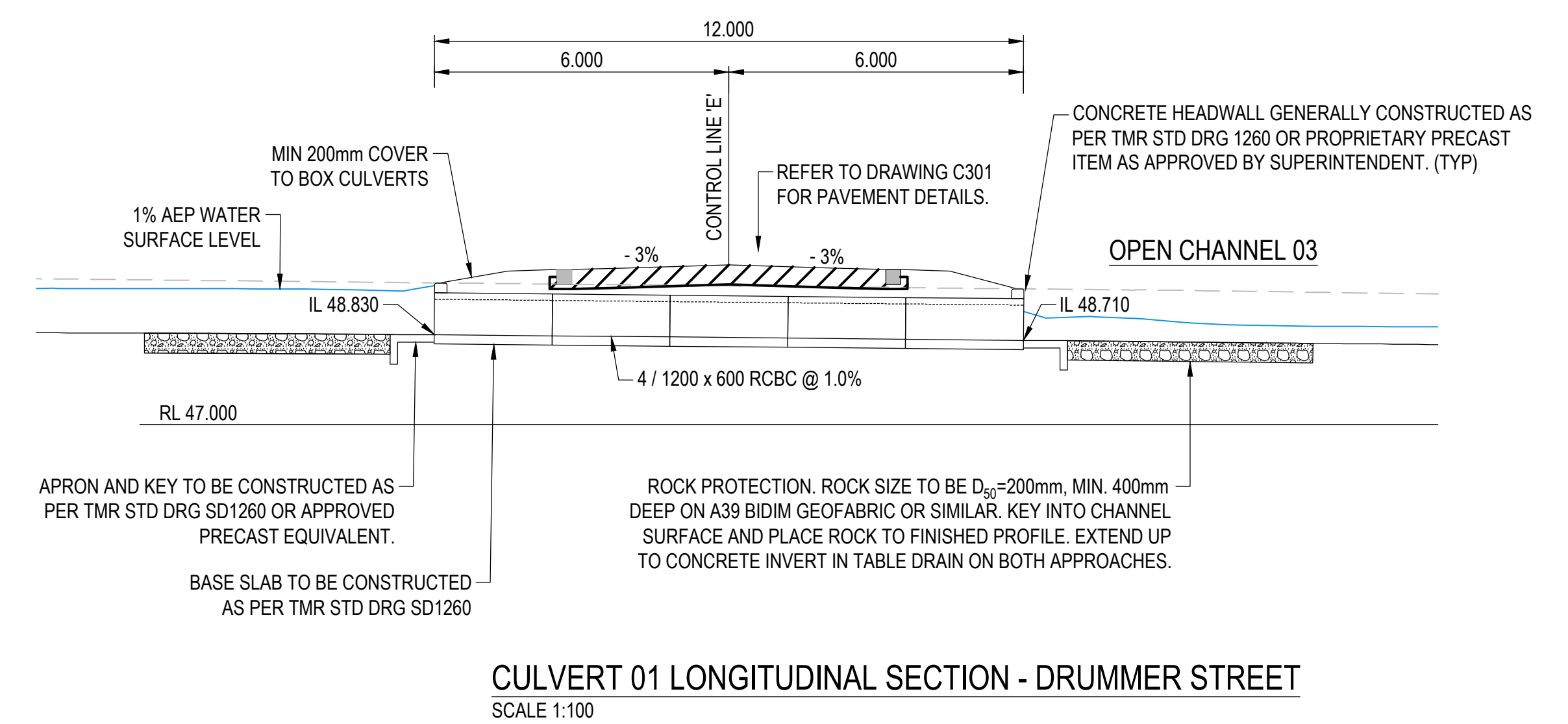
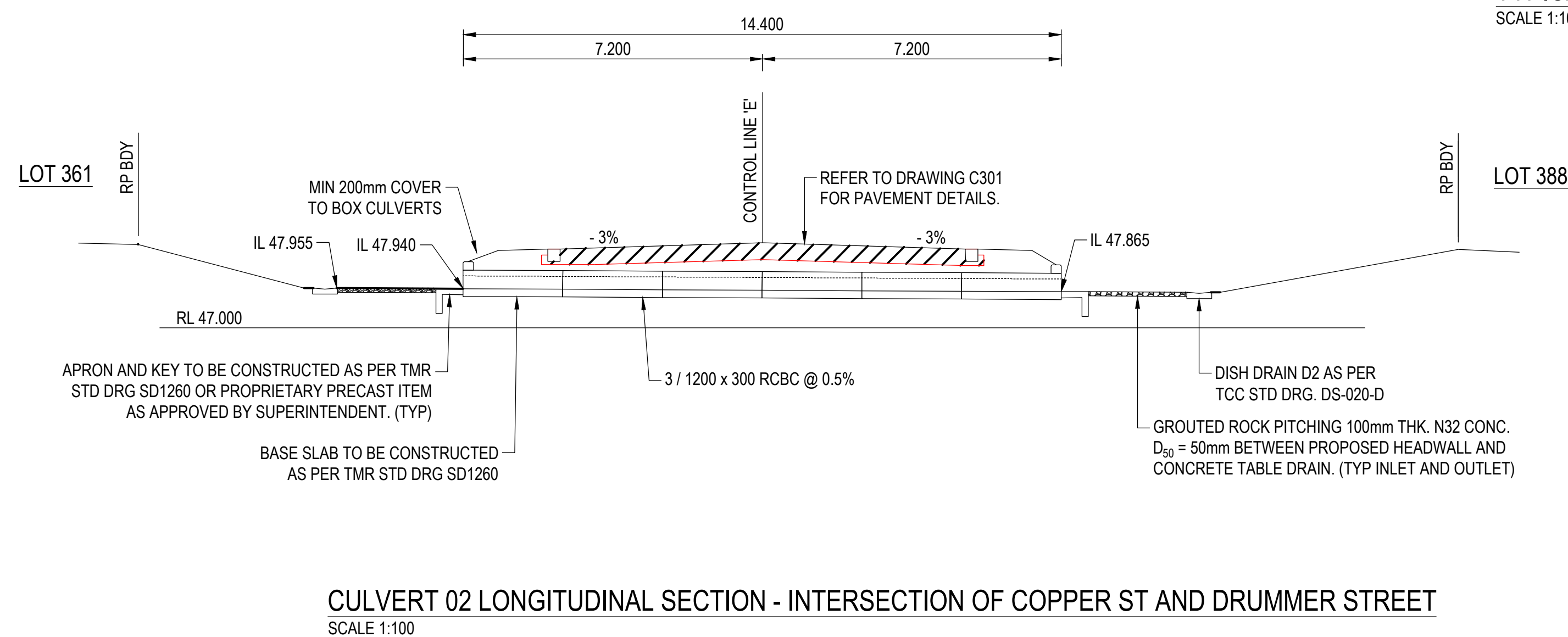
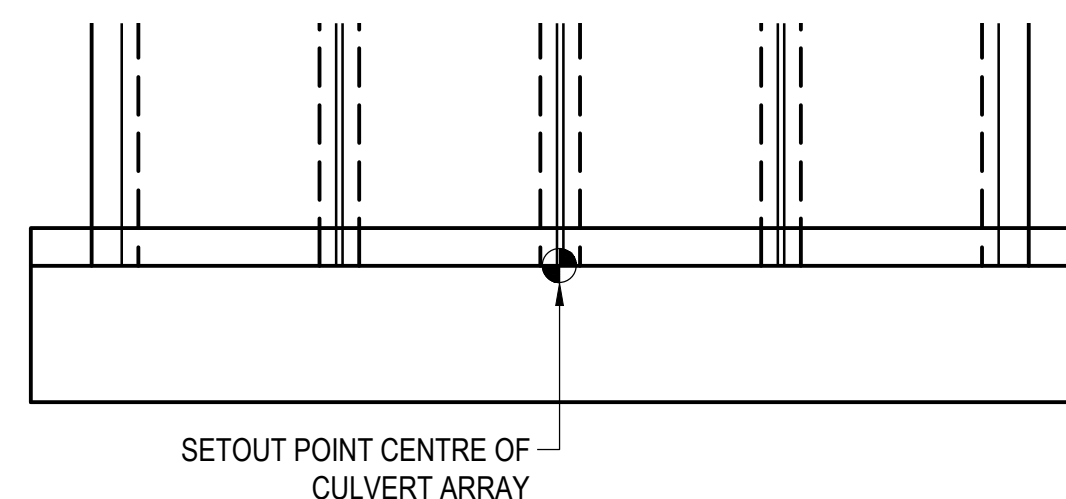
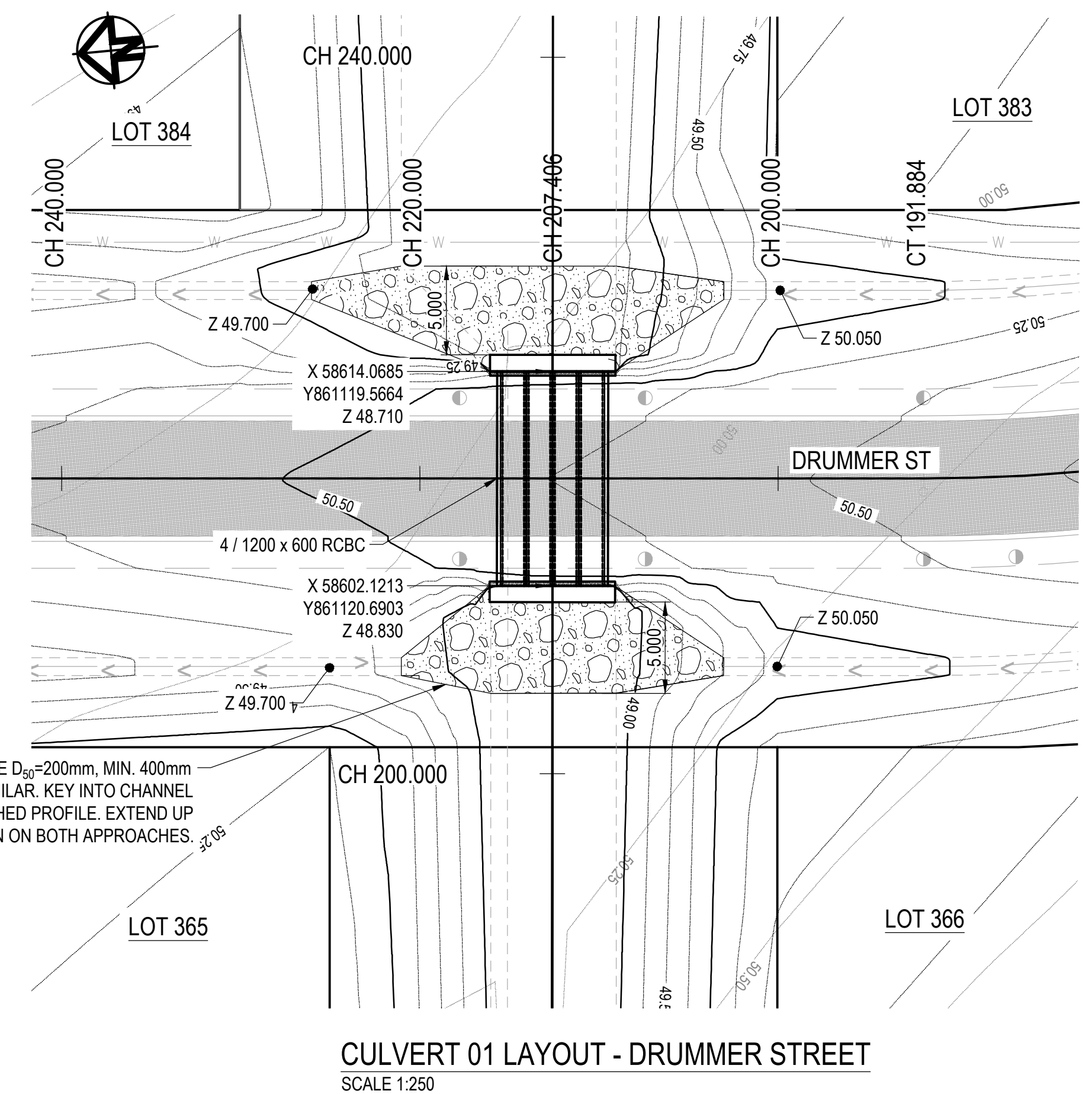


- WORKING PLATFORM SUBGRADE NOTES:

1. SUBGRADE TO BE INSPECTED AND TESTED.
2. THE BEARING CAPACITY IS TO BE CONFIRMED AND PROVIDED TO THE SUPERINTENDENT. THE MINIMUM ALLOWABLE BEARING CAPACITY OF THE SUBGRADE IS TO BE 100kPa.
3. IF DIRECTED, THE SUBGRADE SHALL BE TREATED TO ACHIEVE THE MINIMUM REQUIRED BEARING CAPACITY BY PUSHING ROCK SPALLS OF 150mm (NOMINAL DIAMETER) INTO THE SUBGRADE WITH AN EXCAVATOR.

- WORKING PLATFORM NOTES:

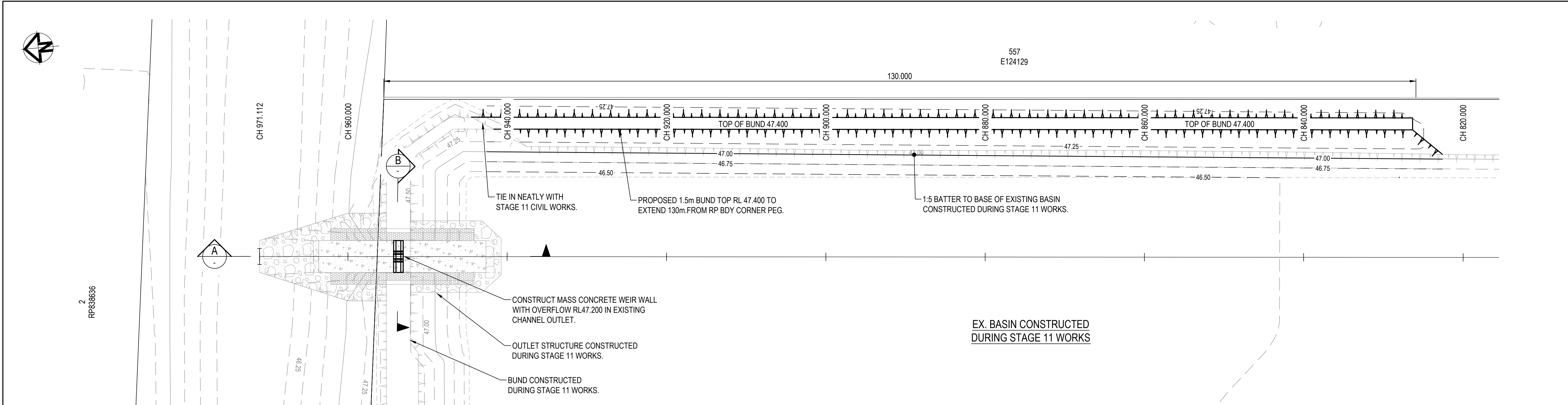
1. WORKING PLATFORMS TO COMPRISE OF STRONG DURABLE ROCK WITH MAXIMUM SIZE OF 150mm AND BE WELL GRADED WITH SMALLER ROCK.
2. THE ROCK FILL IS TO BE PLACED IN 250mm THICK LAYERS AND COMPACTED/TRACK ROLLED USING A PAD ROLLER OR MEDIUM SIZED EXCAVATOR.



APPROVAL ISSUE

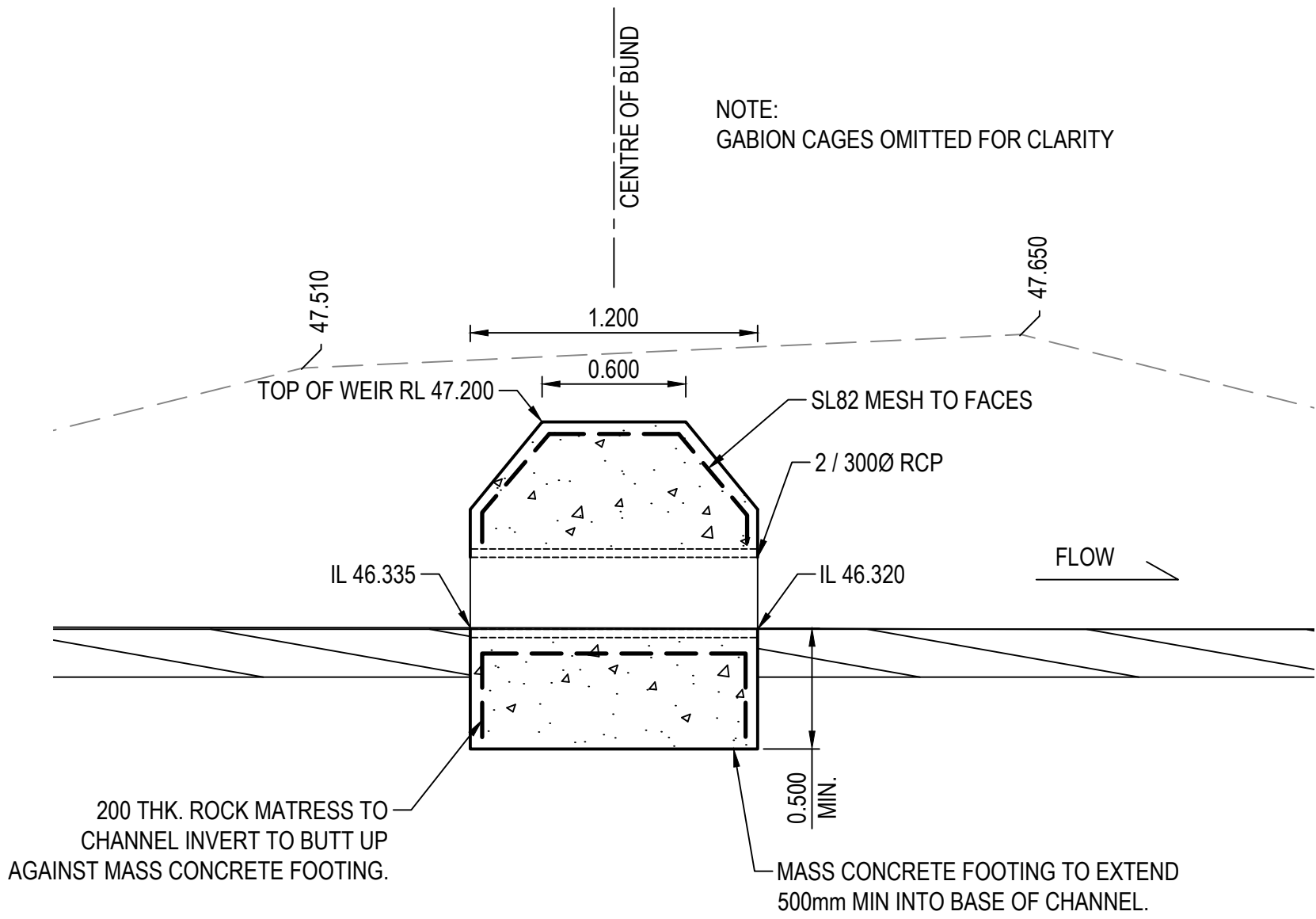
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	A	B.L.	18.11.24	PRELIMINARY ISSUE	DRAWN	C.B.P.	NOV '24								DRG No.	0944 - C401					
	No.	BY	DATE	DESCRIPTION																	

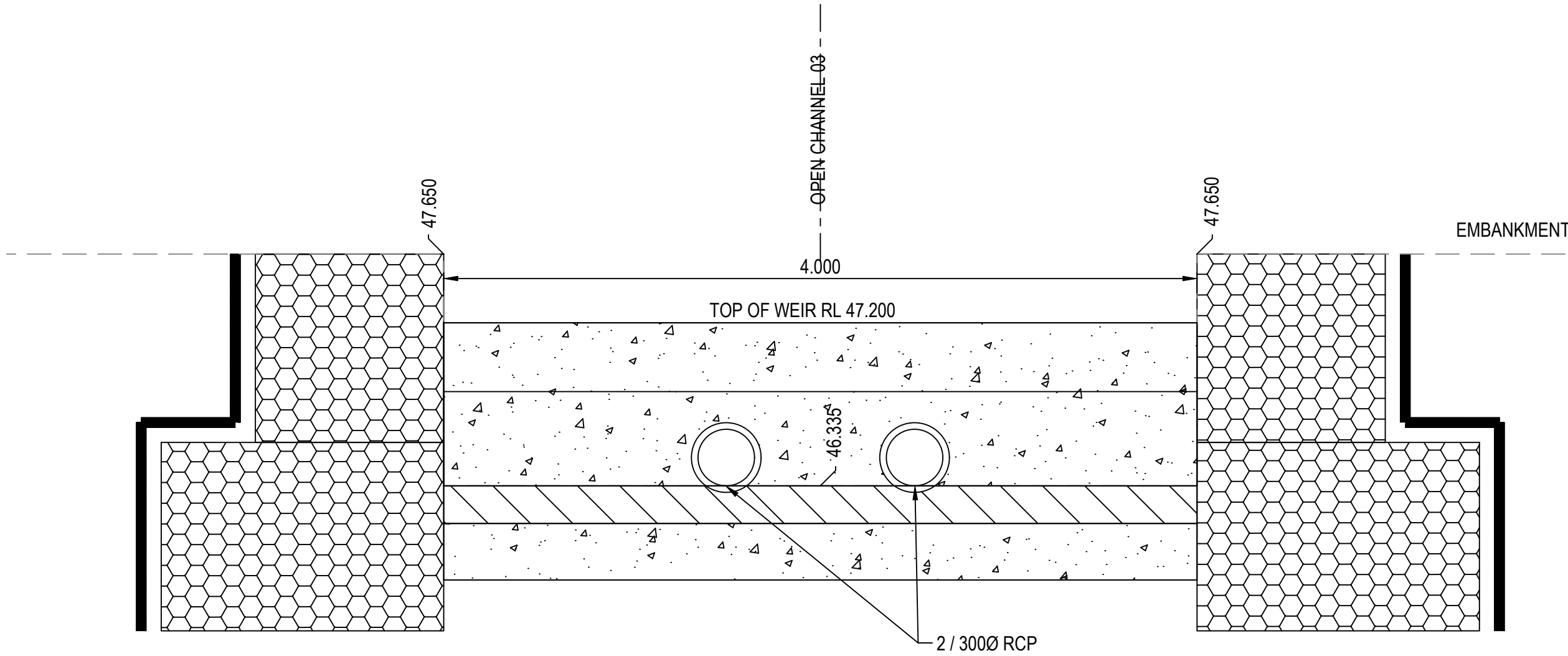


LOW FLOW BASIN OUTLET AND WEIR DETAIL
SCALE 1:250

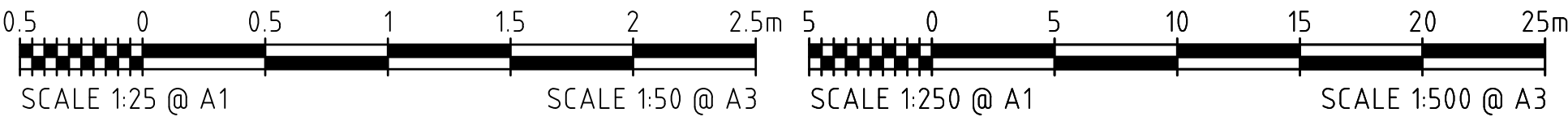
Townsville City Council
Accepted Subject to Conditions
OPW24/0141
07/04/2025



SECTION A
SCALE 1:25

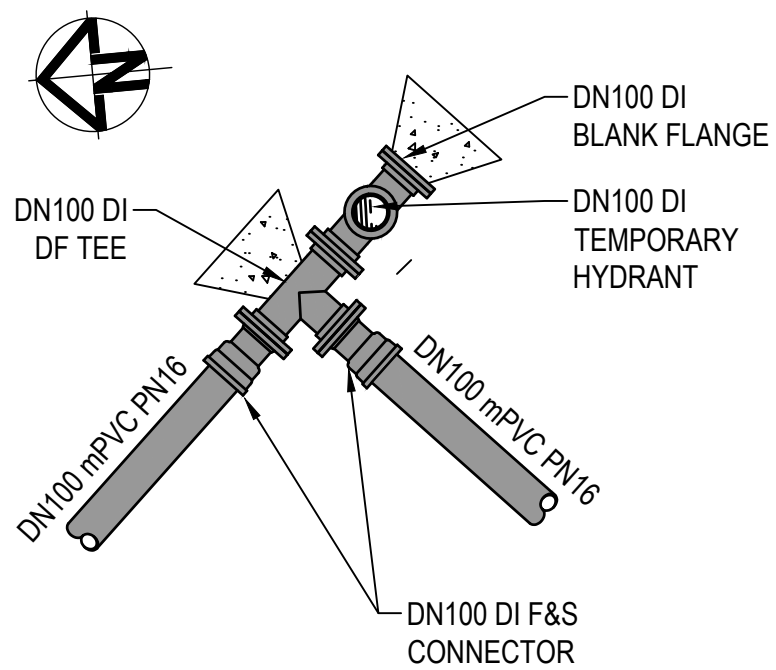


SECTION B
SCALE 1:25

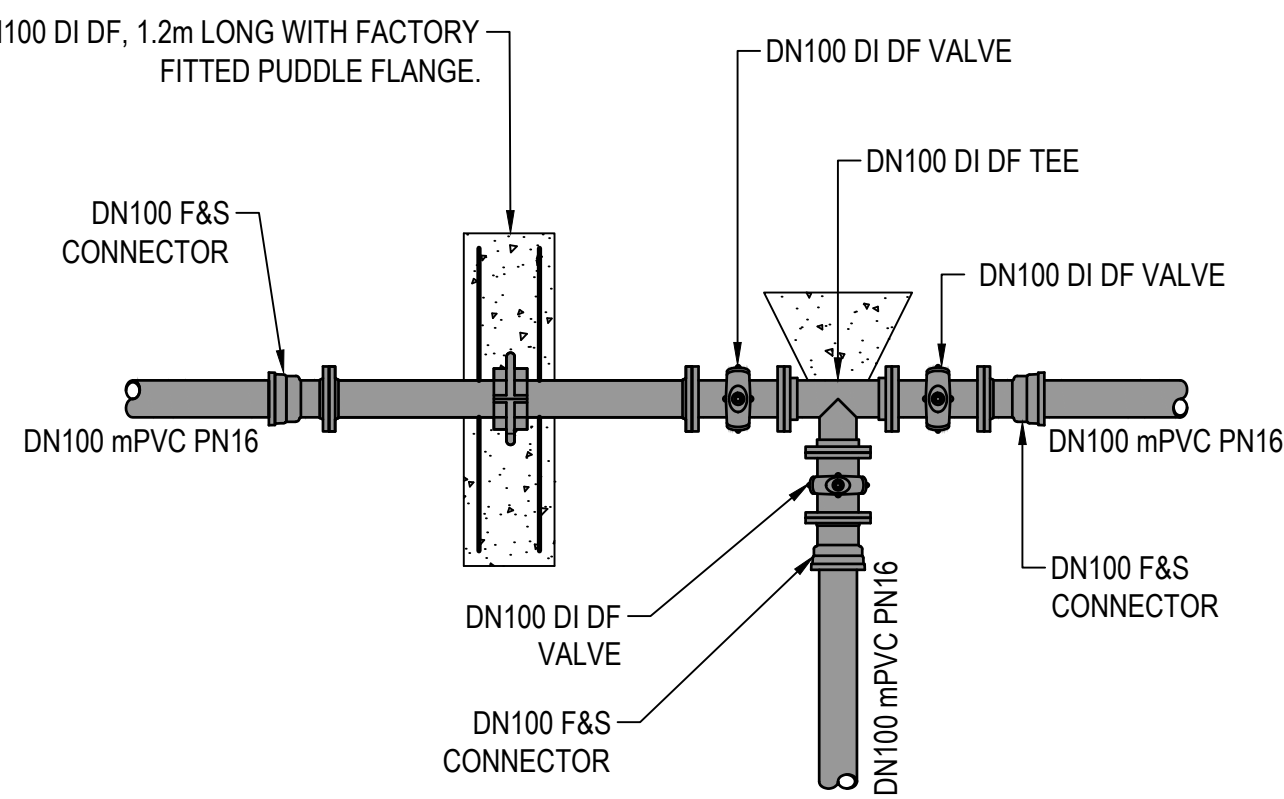


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					VERT. DATUM		AHD			 <div>BRETT LANGTREE RPEQ NO. 11932</div>		NICKEL STREET ALICE RIVER, QLD, 4817 , DRAINAGE DETAILS										SHEET	26 OF 28					
	B	B.L.	06.12.24	APPROVAL ISSUE		DRG. FILE	0944	DATE		COPYRIGHT © <small>These designs and drawings are copyright and are not to be used or reproduced without the written permission of LANGTREE CONSULTING PTY LTD (ACN 29 611 368 024). The contents of this drawing are electronically generated, are confidential and may only be used for the purpose for which they were intended. This is an uncontrolled document issued for information purposes only, unless the checked sections are signed and approved. Figured dimensions take precedence over scale. Do not scale from this drawing.</small>																		
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TEMPORARY END DETAIL
SCALE 1:25



STANDARD TEE DETAIL - DN100
SCALE 1:25

VALVE MARKERS, HYDRANT MARKERS AND PAVEMENT MARKINGS ARE TO BE INSTALLED/REINSTATED IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS

ALL ENVIRONMENTAL PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING COMMENCING.

ALL WATER AND SEWER CONSTRUCTION WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORKPLACE HEALTH AND SAFETY ACT 2011.

CONTACT THE DIVISION OF WORKPLACE HEALTH AND SAFETY FOR INFORMATION PHONE : 1300 362 128

SYMBOLS LEGEND

PROPOSED FIRE HYDRANT	FH	EXISTING FH	○ FH
PROPOSED VALVE	●	EXISTING VALVE	×
PROPOSED SCOUR VALVE	X	EXISTING SCOUR	⌵
PROPOSED DEAD END	└	EXISTING DEADEND	└
PROPOSED REDUCER	>	EXISTING REDUCER	>
PROPOSED CONNECTOR	=	EXISTING ZONE VALVE	⊗
PROPOSED WATER METER	✕ sc	EXISTING WATER METER	✕ sc

NOTE:
THRUST BLOCKS ARE TO BE LOCATED AT ALL HORIZONTAL AND VERTICAL BENDS AND ARE TO BE IN ACCORDANCE WITH SEQ-WAT-1205-1 AND 1207-1

SERVICES (PUP) LEGEND

	EXISTING	PROPOSED
COMMUNICATIONS	C(*)	
DRAINAGE (unknown dia.)	D(*)	
DRAINAGE (known dia.)	○	
ELECTRICITY	E(*)	
O/H ELECTRICITY	V	
GAS	G(*)	
SEWERAGE	S(*)	
WATER MAIN	W(*)	
ABANDONED		

(*) - DENOTES QUALITY LEVEL AS PER A.S. 5488-2013.

AIR VALVES:

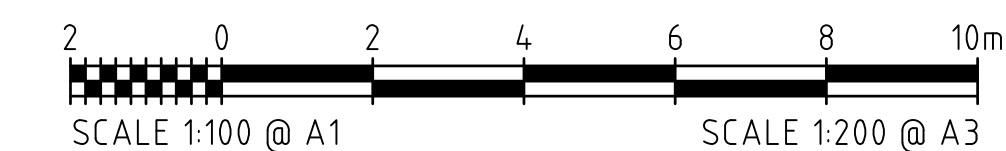
- AIR VALVES TO BE INSTALLED WHERE SHOWN ON THE DRAWINGS
- AIR VALVE INSTALLATION TO BE IN ACCORDANCE WITH SEQ-WAT-1304-1
- AIR VALVES TO BE MAIN D-040 25MM WITH THREADED MALE CONNECTION OR EQUIVALENT WITH BALL VALVE TO SUIT
- LOCALLY FILL AROUND PIT AS NEEDED IF PIPE COVER LESS THAN 950mm. BATTER SURFACE AWAY FROM LID OF PIT
- DN15 BRASS BALL VALVE WITH DN15 COPPER SAMPLE TAP SHOWN ON SEQ-WAT-1304-1 IS NOT REQUIRED

PROVIDE END CAP FOR CONTINUATION IN FUTURE STAGES. REFER TO TEMPORARY END DETAIL ADJACENT

FUTURE STAGE LOTS SHOWN GREY

REFER TO DETAILS ON DRAWING C602 FOR CONNECTION TO EXISTING DN250 PE WATER MAIN.

NOTE:
PROPERTY SERVICES ACROSS ROADS TO BE IN ACCORDANCE WITH SEQCODE STD DRAWINGS SEQ-WAT-1108-1 & 1108-2



APPROVAL ISSUE

6TH DECEMBER, 2024

REFER TO DRAWING C001 FOR GENERAL LEGEND

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DRAWN	C.B.P.	NOV '24

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MT MARGARET ESTATE STAGE 12 - OPERATIONAL WORKS

NICKEL STREET
ALICE RIVER, QLD, 4817
WATER RETICULATION LAYOUT PLAN

SCALE	AS SHOWN			
SHEET	27 OF 28			
REVISION	A	B		
DRG No.	0944 - C601			

- G1. READ THESE DRAWINGS IN CONJUNCTION WITH SURVEY, OTHER ENGINEERING DRAWINGS, SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED. THE NOTES SHALL APPLY UNLESS OTHERWISE VARIED BY THE DRAWINGS OR SPECIFICATIONS.
- G2. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE BUT INDICATES THE REQUIRED PROPERTIES OF THE ITEM. SIMILAR ALTERNATIVES HAVING THE REQUIRED PROPERTIES MAY BE OFFERED FOR APPROVAL.
- G3. REFER ANY DISCREPANCY TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.
- G4. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS IN METRES UNLESS NOTED OTHERWISE.
- G5. VERIFY SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED.
- G6. THE DATUM FOR ALL LEVELS IS THE AUSTRALIAN HEIGHT DATUM IN METRES AND PROJECTIONS ARE BASED ON PM 112800 WITH RL560.874.
- G7. THE CONTRACTOR SHALL PROTECT FROM DAMAGE AND SUPPORT ALL SERVICES THAT MAY BE AFFECTED BY THESE WORKS.
- G8. THE CONTRACTOR SHALL RETAIN AND PROTECT ALL SIGNIFICANT TREES UNLESS WRITTEN INSTRUCTIONS ARE ISSUED BY THE SUPERINTENDENT.
- G9. THE SERVICES ON THESE PLANS HAVE BEEN DETERMINED BY SURVEY AND/OR FROM OLD RECORDS SUPPLIED ELECTRONICALLY. THEREFORE THE LOCATION OF SERVICES AND FEATURES MAY NOT BE ACCURATE OR COMPLETE.
- G10. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL LOCATE:-
 - ALL EXISTING SERVICES WHICH CROSS THE PATH OF THE NEW MAIN AND ALL EXISTING NEARBY SERVICES WHICH MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION.
 - EXISTING WATER SERVICES WHERE THE NEW WORKS CONNECT.
- G11. PIPE LENGTHS TO BE CONFIRMED BY CONTRACTOR.
- G12. DESIGN LEVELS TO BE CONFIRMED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR TO ENSURE MIN. COVER OF 600mm IS MAINTAINED TO ALL PIPEWORK. MINIMUM COVER UNDER ROADWAYS SHALL BE 900mm.
- G13. PIPE LEVELS AND GRADES SHALL BE ADJUSTED AS REQUIRED AS PER TRC SUPERINTENDENT DIRECTIONS TO AVOID EXISTING SERVICES AND TO ALLOW FOR REQUIRED FITTINGS.

RC1. CONCRETE ELEMENTS INCLUDING KERBS, FOOTPATHS, MEDIANS, DRIVEWAYS, ETC. SHALL BE SAW CUT TO ALLOW TRENCHING AND SHALL BE RETAINED WITH MATCHING SURFACE TEXTURE AND TREATMENT AS ADJOINING SURFACES. NEW SURFACE SHALL MATCH SMOOTHLY WITH ADJOINING SURFACES.

CS1. WARNING SIGNAGE IS TO BE PROVIDED FOR ALL CONFINED SPACES IN ACCORDANCE WITH AS1319 - SAFETY SIGNAGE FOR THE OCCUPATIONAL ENVIRONMENT.

CS2. ALL CONSTRUCTION AND O & M WORKS IN ACCORDANCE WITH AS2865:2009 - SAFE WORKING IN A CONFINED SPACE.

F1. ALL TEMPORARY AND PERMANENT FENCING SHALL BE IN ACCORDANCE WITH AS1725.

B1. ALL BLASTING TO BE IN ACCORDANCE WITH AS2187 AND STATUTORY REQUIREMENTS.
B2. ALL AFFECTED UTILITIES AND STAKEHOLDERS ARE TO BE CONSULTED FOR APPROVAL IN ADVANCE OF THE WORKS.
B3. ALL RELEVANT APPROVALS ARE TO BE OBTAINED IN ADVANCE OF THE WORKS.

- P1. ALL PIPE TO BE OF MATERIAL TYPE, CLASS AND COATINGS AS INDICATED ON THE DRAWINGS.
- P2. LENGTHS OF PIPE, SPACING OF FITTINGS, BEND ANGLES, ETC. MUST BE CONFIRMED ON SITE PRIOR TO ORDERING MATERIALS. AMENDMENTS TO BE MADE ON SITE IF REQUIRED.
- P3. ALL DI FITTINGS TO BE COATED AND LINED WITH FUSION BONDED EPOXY (AS/NZS 4158)
- P4. ALL BURIED PIPE, UNO. MAXIMUM DI JOINT DEFLECTIONS :-
 - DN300 AND LESS = 3°
 - DN375 - DN450 = 2°
 - GREATER THAN DN450 = 1°
- NO DI SPIGOT SHALL BE INSERTED INTO PVC SOCKETS.
- P5. CUT TO FIT PIPEWORK TO BE DETERMINED ON SITE AND CARRIED OUT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- P6. PVC-M PIPES WHERE SPECIFIED SHALL BE SERIES 2 WITH RUBBER RING JOINTS TO AS4765 , UNLESS NOTED OTHERWISE.
- P7. BURIED SLUICE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS ON WSAA STANDARD DRAWING WAT-1301.
- P8. ALL SPIGOT AND SOCKET ENDED VALVES AND VERTICAL BENDS OF DN200 AND GREATER TO BE RESTRAINED WITH STAINLESS STEEL HOLD DOWN STRAPS AND ANCHOR BLOCKS IN ACCORDANCE WITH WSAA STANDARD DRAWING WAT-1207.
- P9. PE SLEEVING SHALL BE PROVIDED ON ALL BURIED DI CL PIPE AND FITTINGS APPLIED IN ACCORDANCE WITH AS 3680 AND THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.
- P10. ALL SURFACE FITTINGS AND MARKERS FOR DECOMMISSIONED FITTINGS ARE TO BE REMOVED.
- P11. MAXIMUM DEFLECTION FOR mPVC IS 1° AT JOINTS
- P12. DETECTABLE MARKER TAPE TO BE LAID ALONG THE LENGTH OF ALL NON-METALLIC MAINS AT MIN. 150mm BELOW FSL
- P13. ALL CREEK / OVERLAND FLOW CROSSINGS TO BE DI CL CL35.

T1. PRESSURE TESTING OF PIPES SHALL COMPLY WITH CLAUSE 19.4 OF WSA 03-2011. HYDRAULIC TESTING OF PIPEWORK SHALL BE CARRIED OUT AT THE LOWEST POINT OF THE LINE AT PRESSURE OF 1200 kPa.

F1. ALL FLANGES TO BE PN16 TO AS4087 WITH RAISED FACE FLANGES, UNO. CONSTRUCTOR TO CONFIRM FLANGE COMPATIBILITY FOR VALVES AND FITTINGS.

F2. ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS (GRADE 316) AND NUTS (GRADE 308) COMPLYING WITH AS4087 AND FLANGED GASKETS COMPLYING WITH AS4087, UNO.

F3. ALL BURIED FLANGED JOINTS SHALL BE DENSO WRAPPED, OR APPROVED EQUIVALENT, FOR CORROSION PROTECTION.

V1. ALL SLUICE VALVES ARE TO BE PN16 RESILIENT SEATED VALVES TO AS2638.2, COATED AND LINED WITH FUSION BONDED EPoxy (AS/NZS 4158) AND CLOCKWISE OPENING.

V2. SLUICE VALVE SURFACE BOX TO BE TYPE A1 IN ACCORDANCE WITH WSAA STD. DRG. WAT-1303.

V3. ALL AIR VALVES ARE TO BE INSTALLED IN ACCORDANCE WITH WSAA STD. DRG. WAT-1302.

H1. FIRE HYDRANTS TO BE SPRING "MAXI FLOW" 2000 TYPE MANUFACTURED TO AS3952.
H2. HYDRANTS ARE TO BE COATED WITH A THERMOSETTING EPOXY POWDER TO AS2638 AND AS3952.

GF1. GEOTEXTILE SHALL BE BIDIM A14 OR EQUIVALENT, A NON-WOVEN FABRIC MADE FROM FILAMENTS OF SYNTHETIC FIBRES WHICH MEETS THE REQUIREMENTS OF APPENDIX J OF AS/NZS 2566.2:2002. THE GEOTEXTILE SHALL BE UNAFFECTED BY BACTERIA AND FUNGI AND BE SUITABLE FOR BURIAL

AH1. THE CONTRACTOR RESPONSIBLE FOR THE REPAIR AND REMOVAL OF ASBESTOS CEMENT WATER PIPES IS TO ENSURE COMPLIANCE WITH LEGISLATIVE REQUIREMENTS OF THE QUEENSLAND'S WORKPLACE HEALTH AND SAFETY ACT 2011, REGULATIONS 2011, HOW TO MANAGE AND CONTROL ASBESTOS IN THE WORKPLACE CODE OF PRACTICE 2011, AND HOW TO SAFELY REMOVE ASBESTOS CODE OF PRACTICE 2011.

AH2. ASBESTOS REMOVAL WORK MUST BE CARRIED OUT ONLY BY A LICENSED ASBESTOS REMOVALIST WHO IS APPROPRIATELY LICENSED TO CARRY OUT THE WORK. NO WORK ON ASBESTOS PIPES SHOULD TAKE PLACE UNLESS AN ASSESSMENT OF THE MATERIAL WAS UNDERTAKEN TO DETERMINE THE LEVEL OF RISK AND IDENTIFICATION OF APPROPRIATE CONTROL MEASURES TO MITIGATE THE RISK.

AH3. AS PER THE ASBESTOS REGULATIONS AN "ASBESTOS REMOVAL CONTROL PLAN" MUST BE COMPLETED PRIOR TO THE ASBESTOS REMOVAL.

AH4. WORKPLACE HEALTH AND SAFETY REGULATION 2011 REQUIRES THE CONTRACTOR TO NOTIFY WORKPLACE HEALTH AND SAFETY QUEENSLAND PRIOR TO ANY PLANNED ASBESTOS REMOVAL WORKS.

AH5. IMPORTANT ACTIONS BY THE CONTRACTOR DURING THE REMOVAL OF ASBESTOS PIPES ARE:

- THE WORK AREA SHOULD BE CORDONED OFF (E.G. WITH BARRIER TAPE) TO ENSURE UNPROTECTED PEOPLE CANNOT ENTER THE AREA;
- PEOPLE INVOLVED IN THE REMOVAL PROCESS SHOULD WEAR SUITABLE PROTECTIVE EQUIPMENT;
- THE PRODUCT SHOULD BE WET DOWN PRIOR TO REMOVAL, EXCEPT WHERE THIS WOULD BE DANGEROUS;
- DAMAGE OR BREAKAGE OF THE MATERIAL SHOULD BE MINIMISED;
- PLASTIC DROP SHEETS SHOULD BE USED, AND ALL SURFACES THEN WET WIPED AFTER REMOVAL IS COMPLETED;
- PEOPLE INVOLVED IN REMOVAL SHOULD GO THROUGH SOME FORM OF DECONTAMINATION PROCESS;
- WORK SHOULD BE PERFORMED IN WELL-VENTILATED AREAS, AND IN THE OPEN AIR WHERE POSSIBLE;
- POWER TOOLS SHOULD NEVER BE USED, AS THEY ARE LIKELY TO DISPERSE FIBRES INTO THE AIR.

AH6. IMPORTANT ACTIONS BY THE CONTRACTOR FOR DISPOSING OF ASBESTOS PIPES ARE:

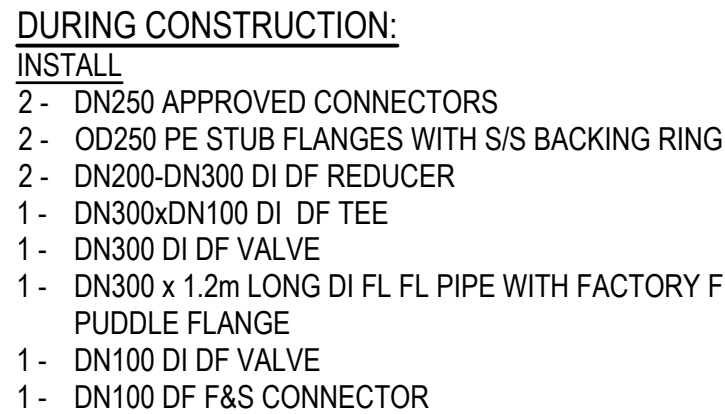
- ASBESTOS IS GENERALLY DOUBLE BAGGED IN 0.2MM THICK PLASTIC BAGS AT THE WORKPLACE BEFORE BEING FULLY SEALED AND TAKEN AWAY. SEALED DRUMS MAY SOMETIMES ALSO BE USED TO DISPOSE OF ASBESTOS;
- THE SEALED ASBESTOS MUST BE TAKEN TO A LANDFILL APPROVED BY THE LOCAL AUTHORITY FOR SPECIALISED BURIAL.

AH7. ANY ASBESTOS TRANSPORT AND DISPOSAL MUST BE IN ADHERENCE TO THE REGULATIONS UNDER QUEENSLAND'S ENVIRONMENTAL PROTECTION REGULATION 2008 PART 2-ENVIRONMENTALLY RELEVANT ACTIVITIES.

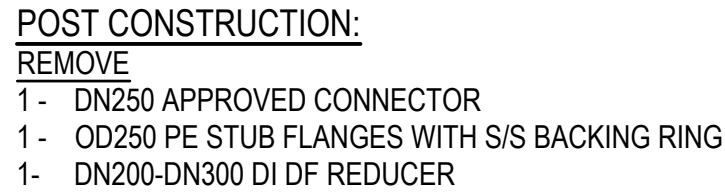
T1. THRUST BLOCK DETAILS SHALL COMPLY WITH WSAA STANDARD DRAWING WAT-1205. ACTUAL SIZE OF THRUST BLOCK TO BE DETERMINED ON SITE BY THE SUPERINTENDENT.

T2. BENDS AND FITTINGS WITH RUBBER RING JOINTS TO HAVE CONCRETE THRUST BLOCKS IN ACCORDANCE WITH WSAA STD DRG WAT-1205.

B1. TRENCHING, BEDDING AND BACKFILL TO COMPLY WITH WSAA STD DRG WAT-1201 TO WAT-1204.
B2. UNLESS DIRECTED OTHERWISE TRENCH TO BE TYPE B..



SCALE 1:25



SCALE 1:25

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